PURCHASING

TUNE. 1953

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The Results: Improvement in performance with *Texaco Meropa Lubricant* was so marked that within six months the other six shears were also changed over. The average life of the gears is now eighteen months.

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PURCHASING

The National Magazine of Industrial Purchasing

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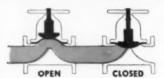
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The operating principle is simple. A rubber diaphragm, seating on metal, makes possible an absolute seal. At the same time, because working parts are wholly isolated, no packing glands are necessary, and stem leaks are impossible.

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▲ PURCHASING PREVIEWS_

A WASHINGTON REPORT FOR PURCHASING AGENTS

JUNE 1, 1953

ECONOMY AT RECORD LEVELS

Nation's economy has been operating at record levels-employment at a peak, wage levels at new record high levels, construction proceeding at top levels.

Basic question is how much of this economic activity is

generated by defense spending and how much is attributable to

large-scale consumer demand.

Roughly 15% of the nation's gross national product is going to defense, and unquestionably a defense outlay of \$50 billion a year is a strong factor in the current econ-

FURTHER "STRETCHOUT" LIKELY

It is fairly certain that the Soviet peace offensive will not lull this nation into a substantial abandonment of the defense mobilization program.

Most likely in the immediate future is a further stretchout in production of military "hardware", rather than a discontin-

uance of the programs.

To individual plants which are directly affected by the stretchouts, this will present a conversion problem, but in the overall impact the stretchouts will not mean a sharp drop in the tonnage of materials which will be required by the military.

Aircraft production, both land and naval based, will continue. The program of research and development of weapons and military equipment will continue undiminished, and there is strong support for an increase in research as a balancing effort if actual production is tapered off.

NO IMMEDIATE CHANGE LIKELY

What the stretchout in military production will mean is still undetermined. For the immediate future, there will be no change. The first indication will come when Congress finally acts on the fiscal 1954 budget.

Efforts of the Administration to effect economies are directed not so much toward reducing the size or strength of the military as they are

toward eliminating waste and duplication of effort.

This will tend to reverse some of the mobilization policies of the last Administration. The policy which has motivated the defense mobilization efforts in the past several years has been to greatly expand the production base of the nation, and create duplicating and standby facilities of all types as insurance in the event of an all-out war.

It is significant that the original concept of duplicating and standby facilities was to be applied by building the facilities in areas remote from the existing industrial complexes of the nation—and remote from the points which the Soviets might easily be able to attack.

This policy was overruled when large-scale unemployment began to develop in industrial centers such as Detroit. The policy was reversed to the extent that it was decided to locate many of the duplicating facilities in the existing manufacturing areas.

CONCENTRATION OF MILITARY PRODUCTION PROPOSED

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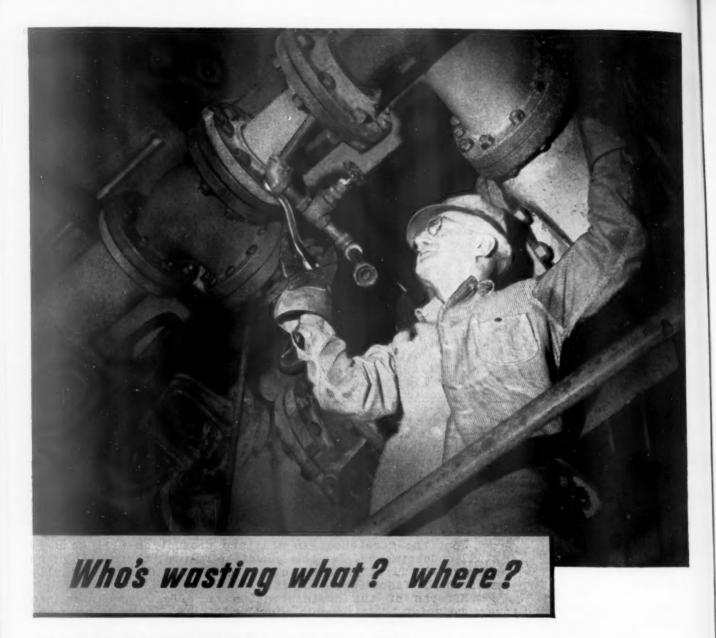
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As an alternative to cutbacks in military production as a means of reducing the defense budget, it is now proposed to concentrate military production in the most economical facilities.

Instead of operating three plants at a percentage of capacity, with resultant high unit costs, it is proposed to put

all the production into the most efficient production line. Result of this procedure would be that production would be maintained at the same level, but at a substantial saving in cost.

This technique would mean a lesser expenditure for defense, but might well mean that the military requirements for materials and components would not be decreased.



Here's a competent and diligent worker doing what's needed to keep an important pipe line operating. How could that be a waste of high-priced maintenance time?

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PRICE TRENDS ANALYZED

Drop in material prices largely reflects the fact that materials are no longer moving at a price level that will yield profits to the marginal producer or the speculative broker.

There is no sharp drop in world demand, but world buyers are no longer bidding up prices in response to black market or gray

market demands.

The underlying prop to materials prices is world-wide demand and increasing costs

of production.

Soft spots develop due to local distortions, such as the accumulation of large tonnages of steel scrap on the West Coast, which has resulted in the depression of prices for such West Coast scrap. While such a surplus tends to keep Eastern scrap prices in check, and may work a hardship on some scrap accumulators on the West Coast, no major effect on finished steel prices can result from such a temporary accumulation of scrap surplus.

Whatever moderation in price levels occurs will result from competitive influences—not large-scale liquidation of surpluses.

A balance between copper and aluminum prices could mean some adjustment. At the same time, there are a number of important factors that are <u>creating higher</u>

cost factors, and these inevitably tend to force prices higher.

Most recent increase in costs has been the trend toward high interest rates for Government borrowings. This will reflect on private borrowings and in the total costs of financing production and distributing commodities and finished goods.

Labor costs are still tending higher. While much has been made of the fact that the cost-of-living index has gone down—largely through the factor of lower prices for food-there is no disposition on the part of labor leaders to forego their demands for higher wages.

CONTINUED RECORD DEMAND FOR GOODS

In practical application, there is little than can alter the outlook of a higher level of economic activity in the immediate future. Certainly for the duration of the year, the cycle of record employment at top wages will produce an unprecedented demand for goods of all kinds.

Economy in Government will not alter the outlook, especially if the economies result in a lesser expenditure without reducing the actual rate of defense production. What can change the outlook is a complete right-about-face in Soviet attitudes and tactics. The implications of such a change -as remote as such an eventuality may beis for world-wide reduction in military preparations, looking eventually toward dis-

At the same time, there is a general realization that the change in world relationships cannot be made without virtually substituting dollar expenditures for rehabilitation and industrialization for the current expenditures on military preparations.

This would mean that a major change in world diplomacy would not bring a collapse in demand for materials.

WORLD OUTLOOK FOR UNEASY BALANCE

Actually there is nothing in the horizon that promises world peace with any degree of certainty.

From all accumulated evidence and from all current indications, the outlook is for continued tension, diminishing for a period and then flaring up with renewed violence.

The decisions and agreements which will have to be made before peaceful settlements can be attained are so far-reaching that guick action is virtually impossible.

At best, the outlook for the next several years will be one of uneasy balance, with large military forces poised ready to strike. Under such circumstances, the rate of military expenditure by all of the contending nations will continue great, with governments wary of spending when peace seems imminent, and spurred to greater military expenditures as flareups occur in the various tension points throughout the world.

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Catalog Files

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46 case studies of how abrasive-belt methods effected savings on machining operations.

Porter-Cable Machine Co.

2. ALUMINUM BOXES

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Zero Manufacturing Co.

3. ALUMINUM EXTRUDED PRODUCTS

28-page booklet on aluminum extruded shapes includes simplified section on tolerances.

Revere Copper and Brass Inc.

4. ANODES AND CHEMICALS

Bulletin covers complete line of anodes, anode accessories, plating processes and chemicals.

Hanson-Van Winkle-Munning Co.

5. BORING MACHINES

New catalog describes and illustrates line of standard precision boring machines.

Ex-Cell-O Corp.

6. BOXES

Booklet, "The Logistics of Boxes", illustrates and describes handling of boxes in load units.

Elwell-Parker Electric Co.

7. BRICKS, STICKS AND STONES

Data on all standard sizes and shapes of abrasive rubbing bricks, abrasive sticks, dresser sticks, etc.

Simonds Abrasive Company

8. BRONZE WELDING ALLOYS

Chemical and physical properties of bronze welding alloys outlined and discussed in folder.

Titan Metal Manufacturing Co.

9. CHANNELS AND FITTINGS

Basic information on steel channels and fittings for materials handling and construction.

Flexa Steel Products, Inc.

10. CHEMICALS

Almost 100 pages on properties, specifications, and applications of organic chemicals.

Shell Chemical Corporation

11. CHEMICALS

Information on company's line of chemical products, plants and technical literature.

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Actual samples, polished to various finishes, of clad steel plates in reference folder.

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44-page book provides basic information on electroplating and detailed data on nickel plating.

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E. I. du Pont de Nemours & Co., Inc.

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Complete data on Micro ball bearings in bore sizes .025'' to 5/16'', OD .100'' to 1/2''.

New Hampshire Ball Bearings, Inc.

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16-page brochure gives complete information on proper roof coating and maintenance.

The Monroe Company, Inc.

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Data and specifications on corrugated asbestoscement roofing and siding in 82-page manual.

The Philip Carey Mfg. Co.

26. ROTARY FILES, CUTTERS

Full line of rotary files, high speed steel ground cutters and carbide tool described.

R. G. Haskins Company

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20-page booklet contains technical data on the application of stainless steel wire.

Allegheny Ludium Steel Corp.

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- Display Equipment
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 Folding Chairs
 - Folding ChairsWork Benches Bench Drawers
- Service Carts Sorting FilesDrawer Units Hopper Bins

 - · Shop Boxes

NEWS OF YOUR Suppliers



Mine Safety Appliances Company, Pittsburgh, has elected J. T. Ryan, Jr. as president, succeeding George H. Deike, Sr., who was named chairman of the board. Mr. Ryan is the son of



J. T. Ryan, Jr.

the man, who, with Mr. Deike, founded the concern in 1914. He graduated from Pennsylvania State College in 1934 and received an M.B.A. degree at Harvard.

H. K. Porter Company, Inc., Tonawanda, N. Y., has appointed F. B. Pinzel assistant general sales manager of the Buffalo Steel Division. Mr. Pinzel formerly had been with Republic Steel Corporation for more than eight years.

Radio Corporation of America, Harrison, N. J., has appointed Joseph E. Kelley manager of the Northeast renewal sales district of the Tube Department of RCA Victor Division. He succeeds Ted Martin, Jr., whose appointment as manager of the Southeast renewal sales district was announced at the same time. Mr. Kelley will make his headquarters in Boston and Mr. Martin will work out of Atlanta, Ga.

Westinghouse Electric Corporation, Pittsburgh, has announced the establishment of a San Francisco branch office to provide better service to customers in northern California and western Nevada. Harold G. Rethmeyer has been appointed branch manager.

His four sales supervisors will be M. Wayne Scolari, George Skipton, G. Burnett Mason and David F. Roach. Al S. Judson is branch office supervisor. Dwight R. Hoopes was appointed branch engineering manager, and John H. Foster is branch service manager. David C. Fulton succeeds Mr. Rethmeyer as manager of marine, aviation and transportation sales. Charles E. Hammond succeeds Mr. Fulton as district machinery electrification manager in Portland, Ore. Edward H. Hulse was appointed engineering and service supervisor of the Salt Lake City office, replacing Mr. Hoopes.

American Brake Shoe Company, New York City, has appointed Paul L. McCullough, Jr. sales manager of its Electro-Alloys division. Mr. McCullough joined the company as a trainee



Paul L. McCullough, Jr.

in 1945. He became a sales engineer in 1947 for the American Manganese Steel Division and the Electro-Alloys division. In 1951 he was appointed district sales manager for the Amsco Division in Pittsburgh.

Dravo Corporation, Machinery Division, Pittsburgh, has appointed Philip J. Berg to its Detroit office to supervise the sale of Dravo Counterflo heaters, crane cab coolers, fabricated piping and construction projects in the State of Michigan. Mr. Berg joined Dravo in 1946 as a project engineer and since that time has had experience in construction, engineering and sales.

De Laval Steam Turbine Company, Trenton, N. J., has appointed William J. Healy, sales manager of the De Laval turbine division, to the additional post of sales manager for the blower and



William J. Healy

compressor division. Mr. Healy joined De Laval in 1928, serving as a sales engineer for the Turbine Equipment Company, De Laval representatives in New England. He was appointed head of turbine sales in 1950.

Graybar Electric Company, New York City, has appointed J. E. Carroll district sales manager at Cincinnati. Mr Carroll joined the company as a salesman at Syracuse, N. Y. in 1935 and became manager there in 1946. He has been commercial sales manager for the company since 1949.

The National Supply Company, Pittsburgh, has named Charles K. Olson, Jr., manager of sales for the Engine Division located at Springfield, Ohio. He had been assistant general manager of the division since November, 1951.

National also appointed Robert M. Pearson manager—inland marine sales for the Engine Division. For the past 10 years he had been manager of sales. He will have his headquarters in Pittsburgh.

Philip W. Place, formerly staff assistant to the general manager, has been named assistant to the manager of sales, with responsibility for general service. J. H. Newton has been named staff assistant to the manager of sales.

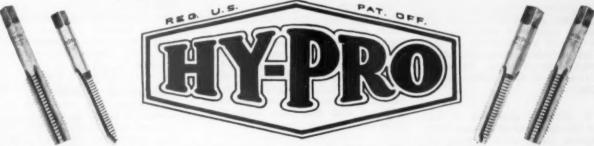
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National Electric Products Corporation, Pittsburgh, has announced the creation of a new section of the Industrial Sales Department to handle its new Nepco header duct wiring sys-



Frank D. King

tem. Heading the new section as manager is Frank D. King, who has been identified for many years with the electrical industry. Mr. King will have his headquarters in Pittsburgh.

Robert Gair Company, Inc., New York City, has announced the appointment of James G. Van Horne, Jr., as salesmanager, boxboard, American Coating Mills Division of the Gair Company. His headquarters will be at the Elkhart, Ind. plant.

Republic Steel Corporation, Cleveland, has appointed Robert N. Griffith manager of the shelving sales department of the Berger Manufacturing Division. He succeeds Clyde S. Bergert, who died recently. In his new position Mr. Griffith will direct a nationwide sales program of a wide variety of Berger Steel Products for warehouses and stock rooms and will supervise a corps of sales representatives in 26 major cities.

Norton Company, Worcester, Mass., has announced that the New York City domestic sales offices of its Abrasive Division, Grinding Machine Division, and Refractories Division, have moved to Green and North Streets, Teterboro, N. J. The new headquarters at the Behr-Manning warehouse and office at Teterboro have been established to improve service to customers in the New York industrial area. The office of Norton Behr-Manning Overseas, Inc., will remain at 61 Broadway, New York City.

Carl E. Johnson, chairman of the board of Sterling Electric Motors, Inc., Los Angeles, Calif., died recently at his home in San Marino, Calif. Born in Chicago, October 6, 1883, Mr. Johnson went to San Francisco in 1903 and two years later moved to Los Angeles, where he resumed his activities in the electrical manufacturing field, which he first started in Chicago.

He was one of the founders of Sterling Electric Motors, Inc. In 1906 he organized the first company on the West Coast for the manufacture of electric motors and generators. During the period from 1906 to 1927, Mr. Johnson was directly responsible for approximately 30 patents for such developments as electrically driven deepwell turbine pumps, die casting of induction motor rotors, across-the-line starting motors, and many others.

American Smelting and Refining Company, Barber, N. J., has announced the appointment of the Troy Belting and Supply Company, Inc., Troy, N. Y., as distributor in the eastern New York and western Vermont area for continuous-cast bronze products made at its Perth Amboy, N. J. plant.

Ohio Brass Company, Mansfield, Ohio, has announced two changes in its territorial organization. W. R. Cress is being transferred to the Chicago area as a district manager and V. L. Crabb has been named district manager in the Cincinnati area.



W. R. Cress



V. L. Crabb

In Chicago, Mr. Cress will take over the territory formerly handled by M. R. Gowing, who has resigned to join the J. S. G. Electric Company. Mr. Cress joined Ohio Brass in 1948, following his graduation from Ohio State University. In 1951 he was appointed district manager of the Cincinnati territory.

Mr. Crabb has been a member of the O-B organization since 1941 when he joined the Mansfield engineering staff. He is a graduate of Purdue University.

Pittsburgh Plate Glass Company, Pittsburgh, has appointed Miron B. Allen vice president in charge of its Paint and Brush Division, succeeding the late Lyman J. Lamb. Prior to his new appointment, Mr. Allen had been assistant manager, Industrial Sales, Milwaukee, Wis., Paint Division for the past five years. Mr. Allen has been affiliated with Pittsburgh Plate Glass since 1927.

Ray-O-Vac Company, Madison, Wis., has promoted E. A. Wright to the position of general industrial sales manager. Mr. Wright, who has been a sales executive of the company for many years, will make his headquarters in Madison.

Lamson Corporation, Syracuse, N. Y., has announced the appointment of Verne C. Story as manager of field operations. In his new post, Mr. Story will be responsible for carrying out



Verne C. Story

sales policy, plans, and the direction of all field personnel located in Lamson's 22 field offices.

Lou Doelling has been promoted from district engineer to field engineer for Lamson. He will be assigned to the company's Atlanta, Ga. office and will take over the sales coverage of Alabama, Mississippi, Tennessee and part of Georgia.

Hercules Powder Company, Wilmington, Del., has appointed E. Langford Jones sales manager of the Virginia Cellulose Department. In his new capacity, Mr. Jones will be in charge of the sales of chemical cotton. Mr. Jones joined Hercules in 1939, immediately after graduating from William and Mary College.

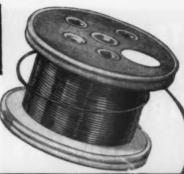
The Youngstown Sheet and Tube Company, Youngstown, Ohio, has announced three changes in sales and order departments. Ralph W. Mowry, manager of the order department in general offices for nearly eight years, has been appointed assistant manager of flat rolled sales. He succeeds L. E. Arnold, who advanced to manager of flat rolled sales when John M. Tuthill, former manager, was transferred to the company's offices in Chicago as assistant general manager of sales. Mr. Tuthill succeeds the late Arthur M. Long. Dave Lewis, assistant manager of the order department, advances to manager.

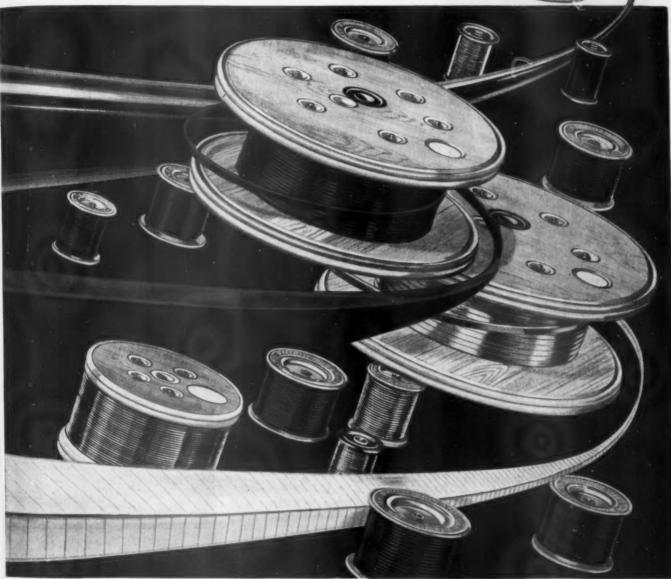
MacDermid Incorporated, Waterbury, Conn., has announced the appointment of A. R. McNeil as New England sales manager. For the past nine years, Mr. McNeil has been Bridgeport sales service representative for MacDermid.

Richard Nyquist of the sales laboratory has joined the field force as sales service representative and Allen Ferguson has joined the MacDermid sales service laboratory.

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FILOSOFY OF BUYING

TO cure whatever it is that's the matter with business—abolish all industrial purchasing departments! That's the advice given by James F. Lincoln, president of the Lincoln Electric Company in a recent discussion program on Station WTAM, Cleveland, as reported in the Plain Dealer. "By doing away with purchasing departments," says this quote, "industry would be thinking more of improving its products, rather than merely promoting them."

A NOTHER outspoken critic of purchasing agents and their role in the world economy is Sir Dennis Holme Robertson, Professor of Political Economy at the University of Cambridge. Sir Dennis delivered the Page-Barbour lectures at the University of Virginia in March, and was quoted by the Associated Press:

"The panicking and tantrums of United States purchasing agencies must bear no small part of the blame if the Australians went out on the tiles in 1950 and if Malaya's fight against communism has been hampered by bewildering fluctuations in the price of her tin."

WITH all the publicity and headlines that blossom forth whenever a purchasing man is accused of shady practices to line his own pocket, and with all the generalizations that promptly put all purchasing men in the same category, it is a distinct pleasure to report two items recently appearing in the press.

According to the Charleroi (Pa.) Mail, March 16, C. D. Bedford, Assistant Purchasing Agent of Titmus Optical Co., Petersburg, Va., checking a shipment of lenses from Corning Glass Works' optical plant at Corning, N. Y., found a \$10 bill tucked in among the lenses. He promptly sent it back to Corning, where it was joyfully claimed by inspector-packer Bessie Priest, who

had lost it at work sixteen months earlier and had long since given up hope of its recovery. rest

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Then just the following day, March 17, the Dallas (Texas) News reported that George A. Hamra of the Texas Power & Light Company purchasing department picked up a battered package from the gutter on Akard Street and conscientiously returned it to the Railway Express Agency. It contained a \$12,500 diamond ring, lost off an express truck.

Let's draw some generalizations on the character and honesty of purchasing men from these incidents.

MONG the honor graduates at the University of Rochester this month is one deserving special mention. Donald S. Judd, 43, Purchasing Agent of the Kellogg Division, American Brake Shoe Company, not only received his degree



Admiring Family Honors Honor Graduate

in business administration, but was one of seven top ranking Rochesterians to win the coveted Phi Beta Kappa key, symbolic of membership in the national honorary scholastic fraternity. The other key recipients averaged just about half his age.

Judd's achievement is the culmination of seven years of steady, perservering effort. Following his graduation from high school, he had taken one year at Colgate University, then ran out of funds and interrupted his college work to take

a job that might enable him to resume his studies at a later time. What with one thing and another, that plan was pushed farther and farther into the future. In 1942, he came to Rochester to join the Kellogg organization, and four years later became purchasing agent. Apparently the emphasis on education in purchasing circles impressed him, for in that same year, twenty years after completion of his freshman studies, he enrolled in the evening classes at U. of R. to take up his 'sophomore" work. It wasn't easy, but with the encouragement of his family and at the sacrifice of a lot of social activities, he stuck with it and came through with top honors. In the cheering section at graduation exercises this month were his proud wife and son Vaughan, 14.

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P URCHASING is a young man's game. In a column devoted to the problems of the "Golden Years" following retirement, in the Fresno (Cal.) Bee, Thomas Collins received and answered the following query:

Q. "Are there any particular fields for a purchasing agent to go into after retirement?"

A. "Why not start selling what you've been purchasing all these years? Who could do it better?"

Tought prospect: It's hard to pry cash loose from the city purchasing department at Phoenix, Arizona, without giving value in return. This painful lesson was recently learned by a frustrated burglar, who did quite a job jimmying open the desk drawers one night, but all to no avail. The following morning, as city detectives breathed hard upon the trail, the P.A. produced the cash box, containing about \$200, and was in business as usual. Part of the sum, no doubt, will be required for furniture repairs.

YOU don't ordinarily expect the machine tool salesman to carry samples of his wares. But that's exactly what the American Association of Machinery Importers is doing. A traveling showroom, carrying a representative assortment of the equipment offered, aboard a 1½-ton truck, pulls right up to the front door of a plant, where the purchasing agent, foreman, and superintendent can see and inspect the machines together, at first hand.

SMALL STAMPINGS

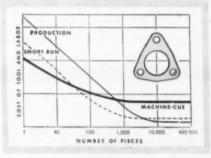
A COST-SAVING, VERSATILE APPROACH TO THEIR MANUFACTURE

Possibly you've always thought that a quick look at the quantity involved decides how a stamping shall be made. Sometimes it is done that way but it isn't the sure way to lowest costs.

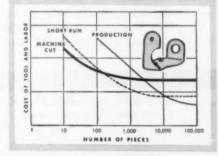
A more scientific approach by the STAMPINGS DIVISION of the Laminated Shim Company in Glenbrook, Connecticut frowns on the term "short run stamping." There is what is known as the short run method but there is no definite dividing point between short run and production quantities. Contour, tolerances, material, many other items all affect the manufacturing method when costs are being carefully figured.

NO ONE METHOD IS ALWAYS CHEAPEST;

Machine-Cut Method: The STAMPINGS DIVISION goes one step further than Short Run and Production Methods. The Machine-Cut Method, though not strictly a stamping operation is a valuable addition to stamping procedure. Custom built slitters, cutters, saws and files use experience-gained techniques to fashion the smaller quantities of parts. No dies are made; only stock punches are used. Obviously labor cost is understandably high but there is no tool charge.



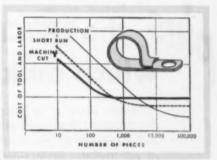
Short Run Method: As quantities increase (and depending upon the complications of contour, material, etc.) the economy of a temporary blanking die must be considered to eliminate the labor expense of machine-cutting. When this point is reached, manufacture is by the Short Run Method and the blanking is supplemented by other bench press operations. Here labor cost is at a medium level but a modest tool charge is incurred.



Production Method: As quantities increase the Production Method using standard dies with high speed automatic presses becomes more attractive. A relatively high tool charge can then be amortized over a great number of parts. Labor charge is negligible.

The Production Method as developed by the STAMPINGS DIVISION is offering unusual cost saving possibilities because of the new low-cost, full service Hecht-type die developed by the company for certain applications.

It is interesting to note that sometimes a very small quantity of parts would require a standard die because of complications or close tolerances or tough materials involved. Thus occasionally a very small quantity goes into the production classification.



LOWEST COST IS ASSURED WHEN SUPPLIER HAS ALL THREE METHODS

The illustrations show typical stamped parts along with relative costs and breaking points for each of the three manufacturing methods. Unless a supplier can offer all three, his costs cannot always be low For a given quantity, only one method can be most economical.

ONE OR ONE MILLION PARTS FROM SAME SUPPLIER

An important corollary to the above is that an experimental part in small quantities can be handled by the same supplier when full production quantities are needed

Further, it is important that a supplier be fully informed, if possible, on later or total requirements for a given part. As the charts point out, such information will affect manufacturing method and make possible cost reductions.

FURTHER INFORMATION AVAILABLE

An illustrated 12 page brochure describing in greater detail the methods mentioned above is available on request to the STAMPINGS DIVISION

Laminated Shim Company, Inc 2406 Union Street, Glenbrook, Conn.

SIMPLICITY in hydraulic pump design is important for these reasons:

The Pesco hydraulic pump is a gear design—the simplest of all hydraulic pumps. There are actually only three moving parts in the pump proper. Fewer moving parts mean—

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- . . . less maintenance
- ... less cost for overhaul
- ... less weight
- ... less noise

which makes possible:

"Pressure Loading" is Pesco's exclusive development that automatically holds end clearance of gears to a thin film of oil, thereby maintaining the volumetric efficiency throughout the long service life of the pump.

 volumetric efficiencies up to 97% over a wide range of temperatures

which assures:

... uniform high quality and performance of each pump
... a longer, trouble-free service life

Simplicity of design, efficiency of "Pressure Loading" and statistical quality control in all phases of manufacture, are three important reasons why Pesco pumps are standard equipment on military and commercial aircraft and on many automotive and industrial products. Write today regarding your hydraulic pump requirements.



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Balancing the Budget

F OR the first time in recent memory, the federal government administration is making a specific and determined effort to balance the national budget. This is an objective that everyone favors—in principle. It has been included in the platform promises of both major parties in election after election. Then it has been promptly subordinated to other considerations, some of which have been forced upon us, most of which have been worthy in themselves, and a few which have been of questionable value or dictated by expediency. President Eisenhower's forthright approach to the problem has raised storms of criticism both within and outside of his own party.

When a budget gets out of balance—whether in a family, a business, or in government—there are just three ways of correcting the situation so as to live within income. You may be able to increase the income; you can eliminate wasteful expenditures and try to operate more efficiently; or you can curtail the luxury items and do with less.

In private affairs, increasing income is the most painless method, but not always the easiest or most practicable. In government affairs, it is the easiest, but since government income is unfortunately synonymous with taxation, it is far from painless to the taxpaying citizen.

The course toward more efficient operation has been amply charted in numerous studies of governmental organization and procedure, and there have been many honest efforts in this direction at the operating level. But the corollaries of personnel layoffs and reduced appropriations are so distasteful and the accomplishments so obscured in relation to total expenditures, that there has been little more than lip service to this approach.

The third alternative involves many difficult decisions, which must nevertheless be faced. The demands upon government for increased services have increased enormously with the growth of the nation and the complexity of modern society, and have been magnified by the concentration of functions in the federal governmental structure. Added to this are the imperative demands for national defense and the huge international commitments that go with a position of world leadership. How much of this is luxury? Where can services and expenditures be curtailed? There are honest differences of opinion, yet the decisions must be made.

The one point that seems to be overlooked is that reduced cost of government, reduced appropriations and expenditures, and eventually a reduced burden of taxation, are in themselves a goal that is recognized as essential to our national well-being and to the development of our economic and material strength. Let's not lose sight of that while arguing about the details. Budgets are always flexible when facing a real need or emergency. But somewhere a courageous start must be made. It may mean the difference between a government that is working for the people, or a people that is working for its government.

Stuart F. Henritz

SKYSWEEPER -ACCURATE TO THE Nº DEGREE

This wonder weapon can detect an approaching enemy aircraft 15 miles (90 seconds) away and blast it out of the sky. The Skysweeper automatically gauges the speed and course of the oncoming target and fires proximity-fused shells to bring down the plane.

Precision-made New Departure ball bearings

help give the Sky-sweeper its uncanny ability to detect and destroy. These instrument bearings are marvels of accuracy themselves. All component parts must pass countless inspections . . . meet the highest manufacturing standards in the industry.

In all applications, specify bearings that fight friction as efficiently as the *Skysweeper* fights enemy jets...specify New Departures!



Highlights

This issue's important features summarized for the busy reader



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While most of the popular attention in regard to Atomic Energy has been directed toward its military applications, one of the basic questions being probed by the scientists and economists is whether this new force has a significant future in our industry. In the atom, we have a potential

source of energy exceeding that of all other natural power resources combined, but one that has inherent limitations of use and that has yet to be harnessed for practicable service. The most logical application seems to be in the field of central power generation. On page 89, an industrial leader whose company has been in the forefront of such research presents a non-technical and objective appraisal and forecast of the atomic age. It may be nearer, but less spectacular, than you think.

Why do many consulting management analysts start their survey of company organization, policies and procedures by a study of the Purchasing Department? And what do they find here that gives the significant clue to company strength and weaknesses? A successful management practitioner lets you in on some professional secrets in the article on page 71. Maybe you'll want to do a little analysis of your own when you read this.

An unusual type of procedure manual is described on page 93 — devoted specifically to the **Expediting Function** of the purchasing department. The operation in which this procedure is used obviously is one where scheduled deliveries are of the utmost importance, to warrant such close

attention, and the results achieved have been outstandingly satisfactory. For any company where similar conditions and problems prevail, there are some practical suggestions here for effective follow-up.

Everybody is concerned with Inventory Control. The basic principles are simple — but beware of oversimplification or you will be heading for trouble. You decide to carry 30 days' supply, for example. But what is 30 days' supply? Is it last month's usage — or an average figure, 1/12 of a year's requirements? If you rely on either one of these figures, you are likely to

find yourself with a surplus or a shortage. Turn to page 74 for a practical, tested method of calculating quantities.

This month's Guest Editorial (page 69) is contributed by John M. Pierce of Wichita, N.A.P.A. Vice President for District 2. His theme is the need for continuing study and effort to maintain high standards of professional competence and advancement—and the means which purchasing agents have at their disposal to achieve and maintain these goals.

Two articles in this issue present examples of successful modern Purchasing Organization and Methods. For the story of General Motors' system of centralized aid and policy control for a divisional operating organization, turn to the article on page 85. For a description of Worthing-



ton Corporation's better procedures for better purchasing, turn to page 77. Every purchasing department can benefit from learning how the other fellow meets the problems of efficient procurement.

An experienced sales executive tells, on page 83, of the changing Status of Purchasing as he has observed it from the other side of the desk. Today's purchasing executive, he finds, is a key figure to be reckoned with in management decisions and in marketing programs. Here is recognition on the practical level of everyday contacts. Do you recognize yourself in the picture?

Want to save yourself from tedious calculations when you have to deal with two different systems of measurement. There's a multi-purpose Conversion Chart on page 111 that will give you quick and accurate answers to most of your problems in this line.

Are you making full use of these monthly departmental features compiled especially for the purchasing agent? The Washington Previews (page 13) keep you informed on current developments in governmental policy. Another section is devoted to Office Equipment and Forms (page 169). Informative Trade Bulletins and Catalogs listed on page 19 are yours for the asking.

COMING-IN NEXT MONTH'S ISSUE

Complete report of the 38th Annual International Convention
National Association of Purchasing Agents

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DON'T REST ON YOUR LAURELS

By John M. Pierce



D URCHASING functions must be designed and purchasing men must be equipped to fit the need of each organization.

We continually read or hear the statement made today that purchasing is recognized by management as one of the key functions of good business. Yes, this statement is true, and it is generally so accepted by management. For better understanding, one has the right to ask why purchasing is so accepted, and what did purchasing have to do to meet the common standards of measurement that management uses to evaluate a part of a business?

It will be necessary for us to step back forty or fifty years in order to get the right perspective and to

supply the supporting evidence as to how purchasing arrived at the place it now occupies in business. At that time the Purchasing Agent was usually referred to as the buyer or assistant. He was the leg man for the boss. He kept his eyes on the stockroom and on the inventory records, if any. He would notify the boss when certain stocks were getting low, then follow instructions given. He interviewed salesmen up to a given point, then turned them over to his employer, who made the buying decisions. (We realize that some buyers, in some fields of business, had full authority fifty years ago, but our observations here are meant for purchasing as a whole.)

In this position, the Purchasing

JOHN M. PIERCE is Purchasing Agent for the City of Wichita, Kansas, and has just completed a highly successful term as Vice President of the National Association of Purchasing Agents for District 2, which embraces the rapidly growing southwestern industrial area, including the States of Texas and Oklahoma, with neighboring Associations at Wichita and at Shreveport, Louisiana. He is the only Purchasing Agent that the City of Wichita has ever had, heading a department that he himself organized and set up some twenty years

Mr. Pierce is a native of Madison, Missouri, where he was born August 14, 1895. He came to Wichita in 1914, taking a position as stock clerk and advancing to the post of warehouse foreman. Subsequently he joined the Wichita Railroad and Light Company as cashier, serving in that capacity up to 1930. City government has been his business since 1932, when he became a clerk in the Auditor's and Treasurer's office. The following year he was invited by the City Manager to set up a centralized purchasing office for all municipal departments and divisions, and he has directed this important activity

In his purchasing assignment, Mr. Pierce pretty much had to chart and grope his own course, for at that time the guide posts in municipal purchasing were few and far between and there was little opportunity to benefit from the experience of other cities. The results of his organization work and successful experience speaks for itself. Wichita's program of centralized purchasing has been widely studied and copied by many cities, other governmental groups, and research agencies throughout the country. His Purchasing Department Manual, compiled in 1948, earned an honorable mention in the Louisville Award contest sponsored by the Municipal Finance Officers Association, and has been widely distributed as literally hundreds of requests for copies flowed in from virtually every state in the Union, as well as several foreign countries.

He has acquired a number of other municipal responsibilities in addition to his purchasing duties. In 1948 he was appointed City Treasurer. Other assignments in the City government include the position of Manager of the City Building Municipal Auditorium, and Supervisor of the City License Office.

He was a founding member of the Purchasing Agents Association of Wichita, served a term as its president during the formative years, and later as national director and educational chairman.

Professional study and education are no mere theory in Mr. Pierce's philosophy; he really works at them. A driving ambition has been to keep continually at work in bettering professional competence and standing, always looking to bigger tasks ahead. For many years, his spare hours were devoted to studies, completing courses in advanced and cost accounting at the University of Wichita, and extension courses of the International City Managers Association in municipal finance, city planning, and the techniques of municipal administration. Last winter he was class moderator and part time teacher for the course in purchasing developed by the Wichita Association in cooperation with the University of Kansas.

Mr. Pierce is a member of the First Baptist Church in Wichita, the Masonic Lodge, Wichita Consistory, and Hi-Twelve Club. He was married in 1924 to the former Adelia Ott; they have a daughter, Gloria, who teaches in the Wichita public schools, and a son, John T. Pierce of Seattle, Washington. For recreation, he likes to stretch his long legs in walking. Baseball is his No. 1 interest in sports.

TLE

Agent had very little authority, but did have ample opportunity to learn the operating principles of the busi-

Business expanded and companies grew, and management of every business learned that they had to "keep up with the Joneses" or lose out. To keep up required the delegation of more and more authority to more and more people. This business evolution, plus the experience of World War I, really put the Purchasing Agent behind his own desk, with authority to do all the buying for his company. Purchasing methods were completely changed. Prior to that time, most salesmen were merely tolerated, but now they are given the welcome sign. While purchasing methods were being revolutionized, selling methods were also. So, for the first time, buyer and seller met each other with confidence. This has paid handsome dividends to management, to stockholders and taxpayers.

Purchasing continued to increase in stature during the 1920s. It took a set-back in the 1930s, but we believe that it was a healthy one, for it forced men to look over the entire horizon. They learned that it took more than just buying for them to do the job. They had to know all the phases of business operation—selling, storing, delivery, quality, value, etc.—in order to be a well balanced Purchasing Agent. Energetic, ambitious men took advantage of the opportunities and prepared themselves to meet the demands of

Their hard work and preparation brought results. The real Purchasing Agent was able to deliver during World War II, when the problems of supply were most difficult. Management then realized that purchasing carried one of the heaviest loads in the entire organization. Shortage of merchandise, priorities, slow deliveries, plus excessive demands, really put him in a strait-jacket. Yet in spite of all the complications, the well grounded purchasing agent delivered to the complete satisfaction of management. And business came to the realization that purchasing is, in fact, a part of manage-

Thus purchasing has found its proper place, but it cannot rest or sit still on victories gained. It must continue to go forward or it will lose much of the ground that has been gained.

Years ago, a local moving concern used to use the slogan: "The world moves, and so do we." That organi-

zation faded out of the picture many years ago, but the world still moves. The past years have taught us that we must keep mentally in high gear to keep pace. Once you become static, you are lost.

This brings us to the subject noted at the beginning of this editorial: Purchasing functions must be designed to fit the need of each organization.

There are many basic rules and principles that apply to over-all purchasing. We find such rules set forth in textbooks such as those by Stuart Heinritz and Dr. Howard Lewis. Their books should be on the bookshelf of every buyer who wants to make purchasing a career. The principles they teach give a Purchasing Agent a good basic knowledge of purchasing principles and practices.

His next step is to know his own organization—its history and the ideals of its officers—the men in the shop, the salesmen—the materials it uses, the products it makes, and how they are made—profit and loss turnover, seasonal and non-seasonal goods, profit items, loss items, traffic freight, plus a general knowledge of selling and company finances.

Not only must a Purchasing Agent be informed on his own company operations, but he must keep up on the operation of other business organizations too—what they are doing, and how they do it. Such a requirement could be quite a task, but he has an organization in his own group that can give him a complete picture all the time.

The National Association of Purchasing Agents renders an outstanding service to purchasing men. This service is provided on three levels-at the National level from the headquarters office in New York; at the District level through the respective District Vice Presidents, who are members of the National Executive Committee; and through the Local Associations. Here Purchasing Agent brushes shoulders with his fellow buyers. Then there are the District Conferences, which broaden his contacts, and finally the National Conventions. Information moves up to the top and back to the local and individual level. Then the Bulletin in turn gives extra help. Other interesting and useful information comes from Purchasing and other basic magazines.

We believe that if a Purchasing Agent keeps his Association membership alive by active participation and contribution, he will always have a place in management. For the Association, as the collective voice and representative of purchasing as a whole, has been a potent force in making and keeping management aware of the value of the Purchasing Agent.



"Your product we find fair. Wish we could say the same about your prices."

A Management Consultant looks at the Purchasing Department

By Albert Pleydell

THE AUTHOR is head of the management consulting firm of Albert Pleydell Associates, Inc., New York City. The interesting thesis presented in this article, with its significant technique of initiating management analysis by a study of the Purchasing Department, is based on intimate first-hand knowledge and unquestioned authority in the purchasing field. Prior to establishing his own professional organization, he had a distinguished career in purchasing and public service. He was one of the key men in the reorganization of the Purchasing Department of the City of New York, under Russell Forbes, during the administration of the late Mayor Fiorello La Guardia, and subsequently served as Commissioner of Purchases for the world's largest metropolis. He was one of the founding members of the National Institute of Governmental Purchasing in 1944, and is a past president of that organization.



AS a management consultant, I am asked, from time to time, to evaluate the entire activities of some particular organization. In such circumstances my client is usually curious to know at what point in the organization I intend to begin my analysis,

"Where's your starting point?" he will ask. "Do you begin with the president and work down to the office boy—or vice versa? Do you select some particular phase of operations—or do you just jump in with both feet?"

My answer, which is usually received with some degree of surprise is to the effect that I prefer to start with the purchasing department.

Why the purchasing department? Because, in the great majority of cases, a review of the activities of the purchasing department is the quickest way of getting an over-all picture of the organization. What happens—or doesn't happen—in this one department can provide a lot of clues as to what is happening throughout the entire company. In turn, these clues indicate those areas where weaknesses exist and which thus would seem to offer the greatest opportunities for immediate improvements.

No Single Yardstick

However, before we can make use of the purchasing department as a guide to the general activities of the company, we must first satisfy ourselves that the purchasing agent is doing an adequate job—or at least as adequate a job as he can

within the limits of his authority. Naturally, if the purchasing agent is not doing a good job, his department cannot be relied upon to furnish the important clues to which I have referred, for reasons which will be obvious. In general, when one finds a poorly run purchasing department, it usually means that the whole company is operating pretty inefficiently. Therefore, before we can look for clues to problems in other parts of the company, the first thing to be done is to see what kind of a job he is doing, i.e., we must measure the effectiveness of his work.

It may be that the purchasing agent is doing a good job within the limits of his prescribed authority, but that these limits are so narrow as to have a substantial in-







fluence on the effectiveness of his department. This in itself is significant, indicating as it does an erroneous concept on the part of management regarding the status of the purchasing activity and its importance to over-all company. (It should be obvious that I am speaking here of purchasing supplies and equipment for maintenance and operation, not of the purchase of raw materials or of parts for processing or converting into a finished product. The importance of this latter purchasing activity is universally recognized because it has a direct and obvious effect on product costs and on the profits of the company. This is a subject that should be considered separately from general purchasing, since it is fundamentally different in so many respects.)

The measurement of purchasing efficiency, or effectiveness, as I prefer to call it, is a topic that has recently been receiving an increasing amount of attention among purchasing agents. The greatest single difficulty, it is agreed, is the absence of any norm or standard against which the purchasing agent can measure his performance. There are several yardsticks by which the effectiveness of the purchasing agent's job can be reckoned, but in each case the result can only be interpreted in terms of improvement, or otherwise, over his own past performance. Short of retaining outside help and making extensive, detailed outside studies, it is next to impossible for him to rate his performance against what is being done elsewhere or against what he might ne doing to achieve maximum effectiveness.

A further consideration is that certain aspects of one purchasing office might be judged inefficient while the same circumstances in

another purchasing office would be entirely normal. This is because purchasing is influenced, to a large extent, by company policy. For example, if it is company policy to purchase certain items from other companies on a reciprocal basis, the purchasing agent could not be expected to obtain the same low prices as a colleague who operates in a "free" market. Similarly, it may be company policy to engage in local piece-meal buying as a good will gesture. In such circumstances the measure of the purchasing effectiveness would be agent's the wisdom with which he distributed his purchasing dollars, rather than the extent to which he consolidates requirements, which would normally be one measure of purchasing effectiveness. There are many such variations from what might normally be considered good purchasing practice, and many purchasing offices have to operate with at least one aspect of the purchasing program that is different from what might be called the general rules of good buying practice.

I do not believe that the effectiveness of a particular purchasing office can be measured solely against general standards. Instead, all judgments must be made within the limits of company policies. Once we know these policies (and at this point we need not go into the question of how wise the policies may be), then we can proceed to evaluate the purchasing department.

Check List Appraisal

There are certain very specific questions that are valuable in making such an appraisal. These fall into two broad categories, professional and administrative. They include:

Professional

- Does he get fair prices?
 Does he have the respect of his suppliers?
- 3. Does he shop around enough?
- 4. Does he have a good standards program?
- 5. Does he engage in new products research?
- 6. Does he visit his sources of supply?
- Does he get around to see how the materials he purchases are used?
- 8. Does he maintain adequate records concerning sources, prices, and consumption of materials, equipment and supplies?
- 9. Does he participate actively in his
- professional association?

 10. Does he keep himself abreast of new developments through the reading of trade journals and other relevant literature?
- 11. Does he periodically review past transactions for:
 - a. prices?
 - b. volume-price relationship?
 - c. fulfillment of delivery promises?
 d. analysis of "emergency" requisi-
 - tions by using departments? e. general reliability of suppliers?
- 12. Does he have sound inspection procedures?
- 13. Does he have an effective program for the identification and disposal of obsolete items?
- 14. Does he reduce paper work by combining requisitions, using blanket orders, or other suitable means?

Administrative

- 1. Is there clear-cut delegation of authority and responsibility within the department?
- 2. Is the supervision effective?
- 3. Is the staff well trained?
- 4. Is morale good?
- 5. Are the office methods and procedures designed to conserve clerical effort?
- 6. Is discipline good?
- 7. Does the work flow smoothly and on schedule?
- 8. Are the records well kept?

Having examined the purchasing department, let us assume that we have found that the purchasing









agent is doing an adequate job, and see what we can learn in his department about the rest of the company.

The first consideration, perhaps, is to discover what buying activities of the organization do not pass through the purchasing department, or those that do pass through but are merely rubber-stamped. When the purchasing agent is not doing a good job, such conditions could be ascribed to a lack of confidence in him and his department. However, when the purchasing agent is doing a good job and is still being bypassed, it is more than likely that something else is wrong.

It may be that the organizational structure is faulty. On the other hand, when some particular aspect of the buying program is the exclusive preserve of some one outside the purchasing department, it sometimes happens that the best interests of the company are not being considered. I have in mind. for example, a company where the food for the cafeteria was bought by the dietician rather than by a food buyer in the purchasing department. The dietician's reluctance to give up his buying prerogative or activity to the purchasing department became understandable when it eventually developed that he was receiving substantial kickbacks from the food suppliers-at the expense of the company, of

Next, an examination of the documentation preliminary to purchase can tell quite a lot about how the organization of the company is working. "Who approves what" is a fairly good indication of the extent to which authority and responsibility have been delegated. If top executives are found to be approving minor purchases, either there

is too little delegation of authority or they are routinely signing documents without reading them. In either case, there is likely to be considerable waste of executive time.

Organizational weaknesses can be detected from a review of transactions where major purchases have been cancelled. This is usually due to a lack of coordination between departments. A purchase is authorized without all the factors being considered, and has to be hastily cancelled when it is realized that some particular phase of operations has been overlooked.

Similar inferences can be drawn from the presence of "white elephants", i.e., equipment purchased in error and not promptly returned for credit, or sold without undue loss. Such a "white elephant" was acquired by the organization where an expensive machine was bought for a certain accounting procedure. It was realized too late that, while the machine itself was an efficient piece of equipment, using it for the purpose intended would have meant disrupting the rest of the office, which was geared to an entirely different procedure. Despite subsequent efforts to dispose of it, it still stands, to the best of my knowledge, as a permanent monument to lack of coordination in that organiza-

Sometimes cancellations are indictave of the absence of standard policy. This is best illustrated by an occurrence in a closely held corporation. One of the "top brass" authorized the purchase of a very expensive item of plant equipment which was already partly installed before his associates learned about the transaction. They contended that he did not have the authority to make such an expenditure, and the purchase was cancelled—but not

without considerable cost to the company. Further exploration revealed that the lack of accepted policy was a major weakness, not only in the matter of approving large purchases, but throughout the entire organization.

Purchase Records as Evidence

Another way in which the purchasing department can provide clues to what is happening elsewhere in the company is by a consideration of the number of purchase orders issued in relation to the dollar value of the buying that has to be done. In some organizations, purchase orders are issued for every single transaction, however petty. A frequent explanation is that the procedure is followed for the convenience of the accounting department, despite the fact that many of the small and unimportant transactions could be taken care of by simple bookkeeping entries. The inference to be drawn in such situations is that an accounting department that is responsible for requiring unnecessary work outside its own confines is not likely to have regard for the best and most efficient methods and procedures for its own operations.

Further consideration of the purchase orders might reveal a large number of confirming orders, issued after the supplies have been bought in an "emergency". The culprit in these circumstances is usually the maintenance department. Sometimes the situation is so bad that everything seems to be an emergency. This is a fairly good indication that the maintenance department has not standardized its repair parts, or has not developed proper job scheduling and controls.

(Please turn to page 322)

How much is 30 days' supply?

N the philosophy of inventory control of stock items, the principle is well established that "coverage" is a function of time. Whatever the quantity involved may be, for stock or ordering purposes, it is necessarily calculated on the basis of estimated requirements for a certain period and correlated with the time required for replenishment of stock.

The record of usage, or issues from stock, thus becomes a key record in translating unit quantities into terms of calendar requirements, and in predicting what those requirements may be for the period ahead. On some items, the rate of usage may be fairly constant. On others, there may be a considerable variation, not always predictable or tied to other operating data of record.

Let's say that inventory policy on a given item or classification has been set, for example, at 30 days' supply. It then becomes necessary to establish the minimum stock quantity or ordering point and the ordering quantity to maintain the desired coverage of anticipated requirements.

The question immediately arises: How much is 30 days' supply? There are a number of different ways in which an answer to this question might be derived. Is it to be taken as 1/12 of annual usage, thus striking an average? Or is it to be based on usage or requirements of the previous month, thus reflecting the current rate of use? In either case, if there is any significant variation from month to month, and if the ensuing month for which the control

ordering, or emergency procurement, perhaps at the sacrifice of normal purchasing advantages. In the second instance, there is the added complication of month-to-month quantity adjustments, defeating the purpose of systematized, automatic control.

applies happens to be a more active month, the desired coverage is not achieved, and the result may be an actual shortage or more frequent

Purchasing Agent W. J. Roemer of Acushnet Process Company, New

Bedford, Mass., suggests that the proper basis to insure having the desired coverage at all times is to consider the *most active* months of a year's experience. To avoid the excesses that might be entailed by taking a single month, that might be abnormally high in terms of continuing requirements, he takes an average of the two most active months of the preceding year. On important items, where large quantities and inventory investment are involved, and where experience

shows wide variation in the rate of use, the principle is extended to take an average of the four most active months over a two-year period. The system has worked well in practice. Mathematically, it is sound for all conditions except a steadily increasing rate of use, and reference to the month-to-month record will quickly disclose any such condition.

The accompanying work sheet has been designed to facilitate calculations under this system.

	ENTORY CONTROL ANA		
MATERIAL	CODE NO.	DATE	Ē
SUPPL IERS			
PAST 12 MONTHS ISS	SUES		DELIVERY TIME
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5			
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8-			
9.			
10.			
11.			
12.			
TOTALS			
MOST ACTIVE 2 MONTHS		INVENTORY	
DIVIDED BY 2)		ON ORDER	
AVERAGE		BUYING PROGRAM	1
PLUS SAFETY FACTOR		PRICE:	
30 DAYS			
60 DAYS			
90 DAYS			
LIMITS: NAME REORDER POINT REMARKS:		MAXIMUM: QUANTITY	TO ORDER
	10000110		
BY:	APPROVED:		

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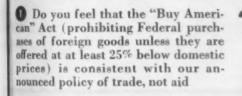
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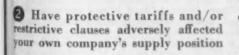
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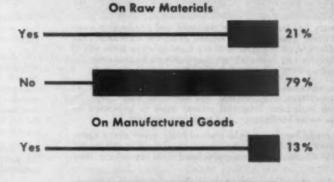
How Can the Policy of TRADE, NOT AID Be Practically Effectuated?

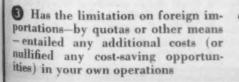
What the United States Council of the International Chamber of Commerce calls the "great debate" on the future direction of American foreign economic policy grows livelier day by day. With the issues now being argued in Congress, and a vote impending on extending the Reciprocal Trade Agreements, it appears that some important decisions will soon be made. We asked purchasing men all over the country for their opinions on those aspects of the international trade question that touch on the procurement function. The combined answers follow.

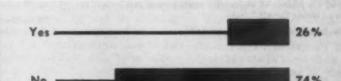




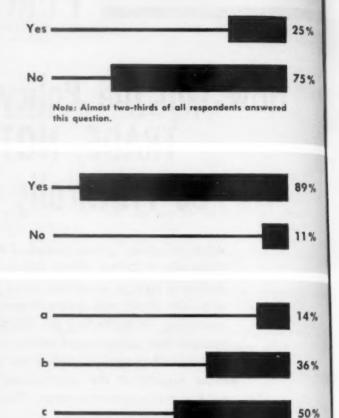








- 4 If your company has any substantial export market for its products, do you find that our foreign economic policy has hampered its growth
- 5 Do you favor further action by the United States toward lowering trade barriers and taking the leadership in encouraging greater two-way international commerce
- 6 If "yes", which of the following steps do you think should be taken now
 - a) elimination of all tariffs
 - b) gradual unilateral reduction of tariffs across the board by U.S.
 - c) negotiated reductions on a commodity-by-commodity, country-by-country basis.



WHAT THEY SAY

"The international economic picture is one of 'dog eat dog'. As long as this condition exists, I believe we should maintain the position of a 'Boxer'."

"Each country has its own living standard and production costs peculiar to itself. Trade, not aid, sounds good, but I am afraid the countries that are on the dole will try hard to have both and if their products or raw materials are not purchased competitively, they will end up with a double hand-out.

"Industries essential to national security and vulnerable to foreign competition (e.g., optical and scientific instrument industries with high labor/material ratios) must be protected by tariff-not to cover inefficiency, but to insure survival.

"Lowering trade barriers would undoubtedly assist many European countries in standing on their own economic feet and would do much to eliminate the unappreciated dole on which they now exist.

"Subsidization of our export trade by loans or plain giveaways is ridiculous. The only way to get off the hook is by lowering tariffs."

"The whole structure should be carefully reviewed by experts from all interested factions. Something must be done!

"Stiffer competition from foreign sources should encourage greater use of all phases of industrial engineering and result in a lower cost of living for all."

"I believe each nation should be permitted to produce those items

it is best suited to produce, in order to build up its standard of living."

Note: A number of respondents made more than one choice, but results have been calculated on the basis of percentages of total choices, rather than on total

respondents.

"Use my tax money for subsidy of essential or infant industry but not for supporting the economy of countries for whose commodities I am forced to pay an artificially high price."

"We believe the time has come when we, in this country, have to recognize the fact that imports from foreign countries cannot be barred completely. There has developed a very strong trend between ourselves and foreign countries in an exchange of materials. You might even liken it to the fact that we are doing business in the U.S. between states without barriers although we do not believe we can follow through that far as yet. But we are travelling fast in that direction."

"I think free trade will bring a better understanding among the peoples of the world - but should be carried out as a long term objective.

"We are in the driver's seat. Why allow our markets to be flooded with items that are plentiful and pay through the nose for those that are in demand."

"Let's face it! Even though it might sound heretical to labor and to management, for world trade we've got to eliminate tariff barriers.

"I believe Henry Ford II would change his view if he were in the microscope business, or any similar small business."

Better Procedures for Better Purchasing

By David S. Gibson

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Assistant to Vice President, Purchases & Traffic Worthington Corporation Harrison, N. J.

ANAGEMENT of today is expecting a better purchasing job to be done by its purchasing departments. Improved purchasing can be obtained by adopting improved purchasing procedures.

It is essential that the sights of purchasing be raised to higher standards in getting the best buys for the dollars we spend for our company. This does not always necessarily mean buying at the lowest price. It means, rather, devising ways and means so that we can first get our house in good operating order and organized by putting in the hands of those people responsible for buying, suitable working tools, methods and procedures which will enable them to perform a more efficient job of buying with a minimum amount of lost motion, and which will enable them to:

1. Consider the soundness of the companies whom we should consider as reliable suppliers;

2. Determine whether such suppliers can meet our specifications, such as size, weight, performance guarantees, efficiency, material, delivery, etc.; and

3. Determine whether such vendors can render satisfactory service in the event they receive an order.

After meeting these three objectives, and only then, should price be considered. Price should be evaluated with relation to these considerations, and in comparison with the prices quoted by legitimate competition.



DAVID S. GIBSON is Assistant to Vice-President, Purchases and Traffic, Worthington Corporation. A graduate of Rutgers University, in Mechanical Engineering, he joined the company in 1924 as a Student Engineer, and served successively as Sales Engineer, Divisional Sales Manager, Manager of Priorities Division, Executive Secretary of the Contract Termination Committee, and General Sales Assistant before coming to his present position in the Purchasing Department.

The more time the buyer has for reflective thinking when studying tabulated bids or prices and properly evaluating them, the better is his purchasing performance.

A way to provide time for more reflective thinking for buyers is to make sure that their time is properly organized, as well as the time of other personnel in the purchasing department. In carrying out the various job functions that are to be performed, there should be a minimum amount of going back and forth between people in various departments in clarifying interpreta-

tion of requisitions that have been initiated, quotations received, purchase orders placed, expediting follow-through, delivery of material, receiving reports (particularly partial receipts), and the checking and paying of invoices.

A Master Form

The Worthington Corporation has developed procedures to accomplish these objectives for its purchasing departments at each of its works by instituting a master liquid duplicating process involving the following forms:

Purchase requisitions Quotations Purchase orders Receiving reports.

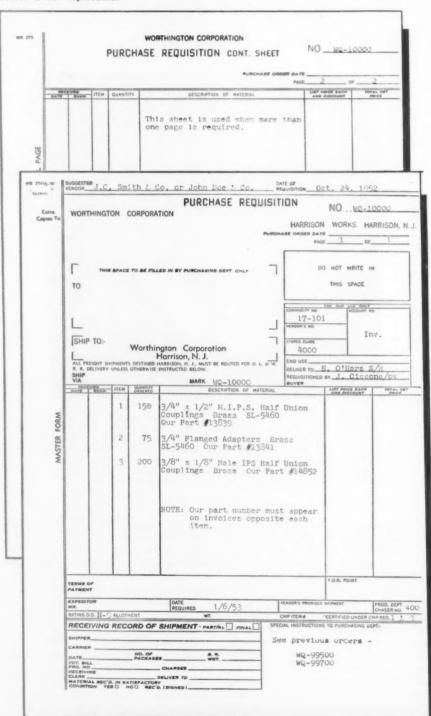
Considerable time and thought were spent in developing a master form which could be used when initiating a requisition at the initial department source. The master is then sent to the purchasing department, and duplicate copies are run off from this master on preprinted quotation forms when it is desirable to invite quotations on a contemplated purchase. At a later date. after tabulating and evaluating the quotations received, the same original master is used to run off duplicated copies of a purchase order on a preprinted purchase order form. After this has been done, the master is than forwarded to the receiving department. Here it is used again in running off duplicate copies of receiving reports on reprinted receiving report forms.

This system is unique in two re-

It has been made possible, with few exceptions, to initiate requisitions at the originating department source.

In respect to receiving reports, it has the added feature of making provision to handle partial receipts by means of a small variable master which is superimposed on the original master.

The master copy is prepared in the department where the requisition originates, with additional continuation sheets if required. Typing along the top margin and in lower right hand corner is not reproduced.

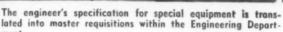


Important Advantages

Many other advantages have been obtained from the installation of this master liquid duplicating procedure. Among these are:

- 1. By initiating requisitions or inquiries at the department source, such as the engineering department or the stores department, misunderstandings have been minimized and much time has been saved by not requiring the purchasing department to call back the initiating department for additional information or clarification. This was frequently necessary in the past, due to poorly written pencil requisitions specifications which did not spell out clearly the item required. A properly worded requisition, using acceptable commercial descriptions or commodities or materials is now received by the purchasing department, or it is returned to the originating department for correction or revision. The purchasing department makes minor corrections, but no major ones.
- 2. At our largest and most varied job shop works, we transferred some of our most experienced order clerk typists from the purchasing department to the engineering department. This move accomplished the following results:
- (a) These experienced typist clerks knew what was necessary in the way of having complete information as well as the proper commercial descriptions of the materials which would eventually be ordered. Accordingly, in initiating a requisition at the source, they make sure that such requisitions are properly described and typed on the master. If certain basic information is missing, these clerks are located right in the engineering department where they can check with the specifications engineer for the correct information and thereby type a complete and correct requisition.
- (b) By having these experienced typist order clerks in the engineering department we were able to







The Stores Department types a master requisition for stock materials directly from the stock ledger card.

save several thousand dollars a year by eliminating the time previously spent by engineers in the engineering department in physically preparing hand-written purchase requisitions. This work is now being done by the typist clerks. The engineers now hand to the typist clerks bills of material checked for the items to be requisitioned. Where necessary, they give the clerks verbal instructions to complete the requisition.

(c) Standard stock items are requisitioned from the stores department by the requisition typist clerks, who type master requisitions from stock cards where the quantity and time required have been previously checked by the stock clerks.

3. The new procedure makes possible one typing operation instead of four which had been required previously in preparing the various forms pertaining to the transaction—requisition, inquiry for quotations, purchase order, and receiving reports. This process also eliminates the necessity of retyping several inquiries for quotations when

several sources of supply are available.

4. It eliminates the time consumed, and the cost of carbons when carbons have to be inserted, in normal typing of purchase orders or when extra copies are required beyond those normally provided by collated snap-out forms.

5. When a mistake is made by a typist on a master form, it is necessary to correct only the master form, and the white and pink tissue copies at the most. Under the former method of typing ten to twenty copies, a typist had to make ten to twenty corrections, depending on the number of copies she has in her machine.

6. All run-off copies of the inquiry for quotations, the purchase order, and the receiving reports are exceptionally clear and legible regardless of the number of copies required. This is particularly important when many extra copies of purchase orders are necessary, as with government contracts.

7. A simple run-off expediting form has been developed and, by using the master, complete information of the items purchased is duplicated on the expediting forms for efficient expediting.

8. The receiving report forms provide a complete running history of all partial receipts, including detailed information regarding the latest receipt. This gives, at a glance, a quick one-paper history of the complete story regarding the shipments received, for the people checking suppliers' invoices against receipts and for all others interested, such as the job chasers, the expediters, the stores department or production department,

After the buyer has analyzed the master requisition, he notes instructions for the typist, who completes the master requisition copy so that either an inquiry or purchase order can be duplicated from the master.



The master form, identical with the requisition, is used on purchasing department inquiries and subsequently on the purchase order and receiving reports. To report partial shipments a supplementary master is duplicated on the bottom of the report form.

PURCHASE ORDER INQUIRY DNLY NO MO-10000 FORM 1 150 3 70 of 16 10th a 95th of m Holse

whichever is involved, and the receiving department.

It should be noted that in the preparation of the original requisitions, the originating department does not fill in any information on the requisition master where the printing on the form is slanted, such as the name of the supplier from whom a quotation is to be requested or with whom a purchase order is to be placed, the purchase order date, the buyer's name, or any price information, terms of payment, the name of the expediter, or any information regarding receiving.

Using the Forms

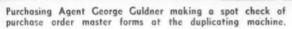
At the top of the purchase requisition, the initiating department may insert the name of a suggested vendor. The initiating department types the date of the requisition also at the top of the requisition. These two items will not show up on any duplicated run-off copies, due to the fact that the space on the back of the master for these two items comes in contact with a blank space on the master carbon, hence no carbon imprint is made on the back of the master when the master form is typed.

The initiating department may also give special instructions to the purchasing department by typing in the lower right hand corner of the master purchase requisition without having such information duplicated on run-off copies, for the same mechanical reasons as indicated above.

In the event a Worthington customer has specified a specific make of some component item to be purchased, such as a motor, this information is typed in the main body of the requisition and the purchasing department follows such instructions. If a choice between two or more makes of a component item is specified by the customer, or by our own engineering department, this information is typed in the lower right hand corner of the master under "Special Instructions to the Purchasing Department" and the purchasing department selects the make from one of those specified which would be most advantageous to purchase.

It is generally preferable to the purchasing department to have no specific make of a purchased component item specified, inasmuch as this gives maximum leeway to the purchasing department to procure the item to the best advantage, taking into consideration the soundness of the vendor, his ability to meet our specifications and to give serv-







Expediters checking delivery status by using their two control copies of the purchase order.

ice, and the best evaluated price.

Many people accustomed to the older methods have contended that extra copies of anything mean extra work in the handling of such paper. This theory, however, does not stand up when extra copies are used as working tools by people who have separate job functions to perform. Once their job has been performed, such extra copies are no longer required and they are thrown in the waste paper basket. They are not filed. Extra copies of complete and accurate information are quickly and cheaply produced by the liquid duplicating process. The process makes it possible to put on the desk of each individual, complete and accurate information regarding the order or receiving report, to enable them to handle either the order or the receiving report as the case may be.

One of the revealing things in procurement is the great variation in prices received from quotations by bidders on the same items, identically described on the inquiry which goes to each bidder. One of the greatest assets in adopting the liquid duplicating process is the ease with which buyers can send out inquiries for quotations without several retypings. In the vast majority of cases it is unnecessary to retype the basic description of material for the order which is finally given to the successful bidder. This has a potential saving of several thousands of dollars a year by providing an efficient operating tool to facilitate the procurement of competitive bids by the purchasing department.

The exhibits shown herewith illustrate representative key forms used in this system, as well as charts showing the flow of the paper under this procedure. A complete tabulation of all forms used in all departments is as follows—but it should be understood that this includes a number of alternative forms to be used under certain circumstances. A single requisition, purchase order, or receiving report does not require using all 33 forms.

1. Purchase Requisition — Master without printed shipping address

2. Purchase Requisition — Master with printed shipping address

3. Purchase Requisition Continuation Sheet-Master

4. Purchase Requisition — Work Sheet

5. Purchase Requisition Continuation Sheet—Work Sheet

6. Inquiry Form

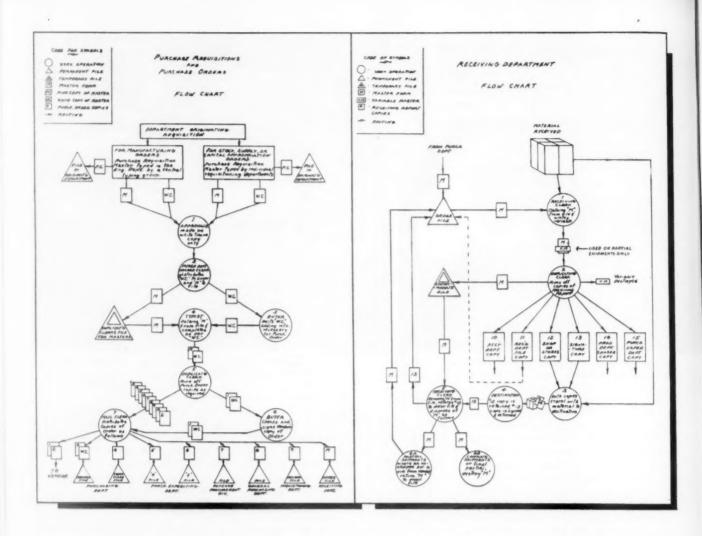
7. Inquiry Form Continuation Sheet

8. Purchase Order-Original

9. Purchase Order — Acknowledgement Copy

Manager of the Stores Department reviews receiving reports prepared by using the original purchase requisition master.





10. Purchase Order - Purchasing Department Record Copy

11. Purchase Order - Commodity File Copy

12. Purchase Order - Expediting Copy (for filing by order number cross referenced to 13)

13. Purchase Order — Expediting Copy (for ticker file)

14. Purchase Order-Works Defense Procurement Division Copy

15. Purchase Order - General Purchasing Department Copy

16. Purchase Order - Originating Department Copy

17. Purchase Order - Continuation Sheet

18. Purchase Order-Extra Copy 19. Purchase Order Continuation Sheet-Extra Copy

20. Variable Master for Partial Shipments

21. Receiving Report - Receiving Dept. Copy, complete shipment

22. Receiving Report - Shop or Stores Copy, complete shipment

23. Receiving Report - Signature Copy, complete shipment.

24. Receiving Report - Accounting Dept. Copy, complete shipment 25. Receiving Report-Prod. Dept. Chaser Copy, complete shipment

26. Receiving Report—Expediting Dept. Copy, complete shipment

27. Receiving Report - Receiving Dept. Copy, partial shipment

28. Receiving Report - Shop Stores Copy, partial shipment

29. Receiving Report - Signature Copy, partial shipment

30. Receiving Report - Accounting Dept. Copy, partial shipment

31. Receiving Report-Production Dept. Chaser Copy, partial shipment 32. Receiving Report—Expediting

Dept. Copy, partial shipment 33. Receiving Report Continua-

tion Sheet

In each original master requisition there are also two tissue copies, one white and one pink, each backed with a one-time carbon. The white tissue copy accompanies the master and is used as a work sheet: the pink tissue copy is retained for record purposes by the department initiating the requisition.

Normally the use of two liquid duplicating machines is required. One is located in the purchasing department and another in the receiving department. The cost of forms for the liquid duplicating process is slightly more than for snap-out forms with a comparable number of copies. These costs and any other minor indirect costs chargeable to this process and procedure can be more than offset, however, by the advantages to be gained, as enumerated above, in the adoption of this streamlined system.

It is questionable whether this system would be suitable to small purchasing operations with limited personnel and having only a few purchase orders to handle each day.

It is recognized also that the system and procedure as outlined may have to be slightly modified or adjusted to meet the requirements of many plants due to the type of industry and physical location of their various departments. The basic concepts are sound, however, and experience has proved them to be workable with gratifying results. For some, it may involve raising their sights on the purchasing horizon to obtain the end results of better over-all purchasing, but it will save many dollars in their buying and will more than offset the cost necessary to install and put into operation a better system.

Changing Status of the P. A. in Industrial Evolution

By Laurence A. Wogan, Industrial Products Sales Manager, Tide Water Associated Oil Company, Boston, Mass.

This article presents an objective analysis of today's purchasing agent and his job, as seen from the other side of the desk. It was prepared for presentation at an industrial sales conference, expressing the challenge facing every salesman to keep abreast of the progress in purchasing. The same challenge applies to every man in purchasing as well.

THOSE of us close to the industrial lubricants market have not failed to observe in the last year or so a decided evolution in the attitude of the buyers. This is consistent with the constantly accelerated change going on throughout industry today.

There is no doubt that a certain amount of this change of attitude among industrial buyers resulted originally from real or imaginary scarcities. However, there is a deeper significance in this change which we as marketers must grasp to maintain our position with customers.

The majority of buyers we meet have at least one war experience behind them—many with two. These war - experienced buyers have trained the younger men on their staffs so that in the average industrial plant we find a well informed aggregation with whom we must do business.

There you have the real change—a change from the panicky, easily stampeded purchasing agents of a decade ago. The purchasing agent we must deal with now, and from here on out, is a calm, seasoned veteran, surrounded with a well

trained staff who know their busi-

Since the close of World War II, industrial management has given considerable study to purchasing practices and policies. Large manufacturers, as well as smaller ones, have conducted training courses for their buying personnel right in their own plants. Others have financed the training of their purchasing staffs at colleges and universities.

Purchasing associations have expanded and enlarged their purposes far beyond mere good fellowship luncheons. Attendance at meetings of purchasing groups has come to be a serious obligation of members.

During a recent interview with the purchasing agent of a multimillion dollar manufacturing plant, I was shown some text books—part of a correspondence course being taken by the purchasing agent and his entire staff. This course was a requirement of the management of this concern, and was a continuous program.

One of the textbooks was entitled, "How to Improve Business Communications". A large portion of the textbook was devoted, believe it or not, to a discourse on how purchasing agents should make the most of their personal or correspondence contacts with salesmen.

Another general purchasing agent of a large machinery builder informed me that he had initiated a program wherein, by rotation, he and his staff were making regular visits to their supplying company plants to better acquaint themselves with the suppliers' products and manufacturing problems.

The general purchasing agent of a 16-mill textile group in New England is required by his management to spend not less than one day each week at one of their mills for a closer first-hand understanding of the applications of the products he purchases. All buying personnel of this big textile group are textile school graduates and have served an apprenticeship in the mills.

The basic changes we have been observing in industrial management since World War II have definitely strengthened the position of the purchasing agent. More and more, he is an important figure in general management councils and is well briefed in the detailed requirements of his manufacturing departments. No longer does he function as an order clerk. Industrial management today requires that purchasing staffs know exactly what is wanted and why it is wanted.

To us, as marketers, this change in the status of buying personnel is the most important phase in the evolution of industrial management since World War II. The simple truth is that we are facing today, in our sales solicitation, the best trained, best informed, and smartest group of men ever to sit behind purchasing agents' desks.

As suppliers of essential products for industry, how do we stack up against this well schooled group with whom we must do business? Can we match his knowledge of the products we are selling? Do we know as much about his industry as he probably knows about ours? Have we given as much study to

his product requirements as he has—or do we just make a few random guesses before we go into his office?

Today's buyer of lubricants—and other industrial products—is no guesser. He will not engage in "guessing games" with you. He will make a keen and prompt appraisal of your knowledge, and will not leave you guessing as to why you did not get his business.

There is nothing more important today in the solicitation of industrial products business than a maximum knowledge of your customer's business and his specific product requirements. Aside from the ordinary amenities, the purchasing agent today is looking for and ex-

pects from us specific and precise information on the products we are offering.

Imperatively, we must give more study to the business of our customer or prospect before we enter the plant. We must gather all possible information concerning the type of business he is in; the general market conditions currently being experienced in that business; its place in the defense program; the local conditions affecting their operations, such as labor, competitor relations, or general status in their particular industry.

Therefore, it is absolutely essential that, as vendors, each of us must be continuously informed on

the availability of the products we are manufacturing for industry. Our responsibility includes a careful and constant watch on industrial product inventories. We must maintain the closest liaison with our warehouses and make careful anticipation of customer requirements. We must be as familiar with his inventory as we are with our own.

You will surely agree that no change in industry today affects us more importantly or directly than the evolution we have observed in the status and stature of buyers. No other phase of this change in our market is more challenging or stimulating to our best efforts.

Are we meeting this change?

WEEKLY BUYING SCHEDULE

PURCHASING Agent George L. Wilson of Jefferson County, Alabama, with headquarters in the Court House at Birmingham, systematizes the purchase of staple requirements by setting up a buying schedule, each major commodity classification being assigned to a particular day of the week for purchasing action, as indicated on the accompanying chart, which is incorporated in the County's "Manual of Centralized Purchasing".

One important advantage of this policy is that it encourages timely anticipation of requirements and orderly requisitioning practices on the part of the many and varied County departments and institutions for which this purchasing department buys. Items are grouped according to the classifications on the chart, with separate requisitions for each classification, and requisitions are received in the purchasing department two days in advance of the appropriate "buying day". This gives the purchasing department time to analyze requirements and quantities and to plan its purchases. It has also served effectively to minimize rush orders for staple needs, since any departure from the established schedule requires a special emergency requisition.

In addition to the advantages in departmental operation, scheduled buying is of substantial benefit to

				ot. not later than I
1	1	1	1	1
THURSDAY A.M.	FRIDAY A.M.	MONDAY A.M.	TUESDAY A.M.	WEDNESDAY A.M.
MORDAY Printing Lationery and ffice Supplies	THESOLY OTHES Mardware Building Materials Paints Lumber Janitor Supplies Aftechen Equipment Electrical Supplier Equipment	WEONESDAY Auto Parts and Accessories Oils & Greases Tires & Tubes	THURSDAY Weath Grocerien Produce	FRIDAY Dry Goods Clothing Shoes Uniforms

Group items and write separate requisitions for classifications given in above schedule.

Emergency items will be handled only on special emergency requisitions.

vendors and their salesmen. Especially in respect to local suppliers, salesmen have familiarized themselves with the schedule and time their calls and quotations to fit in with it. The benefits of this feature are enhanced by the fact that the County's buying schedule has been

coordinated with a similar practice in the purchasing department of the City of Birmingham, located in a neighboring building, so that the salesman of a particular product can make his call upon both offices at an appropriate time with a minimum of lost time and motion.

Centralized Policies and Aid for Divisional Buying System

By Dwight G. Baird



Dan Hulgrave, executive in charge, Procurement and Schedules Activities, Manufacturing Division, General Motors Corporation, with key members of his staff. Mr. Hulgrave this year completes forty-five years of service with GM. He joined the organization in 1908, and was Manager of Purchases for the Cadillac Motor Division for many years. In 1948 he was named director of the Purchasing and Salvage Section on the Central Office staff, and assumed his present duties in October, 1949.

Standing (I. to r.) are: P. A. Switzer, Director, Schedules and Statistics Section; A. J. Campau, Director, Purchasing and Salvage Section; Leo Shaw, General Secretary, GM Traffic Association; W. M. Walker, Jr., Administrator of Government Regulations; J. J. Sherry, Jr., Assistant Director, Purchasing and Salvage Section; W. H. Swartz, Director, Material Procurement Section.

TO understand how General Motors Corporation buys upwards of four billion dollars worth of materials and supplies and transportation services from many thousands of sources annually, one must understand how the corporation is organized and how authority, duties, and responsibilities are passed along from the central headquarters at Detroit to the farthest outpost of this far-flung industrial empire.

As is well known, General Motors operations are decentralized. It is sometimes referred to as a staff-and-line type of organization, being similar to an Army corps in this

respect. Just as an Army corps has its headquarters and operating elements such as divisions, regiments, battalions, and companies; and its staff elements such as corps quartermaster and communication, so General Motors has its headquarters, operating elements and staff elements.

Responsible to the Board of Directors are the President and several standing committees, including the Financial Policy Committee and the Operations Policy Committee. Assisting the Operations Policy Committee is the Administration Committee which, in turn, considers

matters forwarded to them by various policy groups such as Distribution, Personnel and Employe Relations, Manufacturing, Canadian, etc., to name but a few.

Assisting the President are two Executive Vice Presidents — one in charge of the Automotive and Parts Divisions, the other in charge of the other GM Operating Divisions. A third Executive Vice President has jurisdiction over the financial and legal staffs, and is chairman of the Financial Policy Committee.

There are six group executives, with the rank of Vice President, re-

porting to the Executive Vice Presidents, who have under their jurisdiction the following groups:

Car and Truck Group

Body and Assembly Divisions

Group

Accessory Group

Engine Grounp

Dayton and Household Appliance

Overseas and Canadian Group There are also seven Vice Presidents in charge of various staff activities.

All of these have their clear-cut duties and responsibilities. For example, reporting to the staff Vice President in charge of manufacturing is, among others, the staff executive in charge of procurement and schedules activities.

But General Motors has 39 manufacturing divisions and 119 plants located in 61 cities throughout the country. Each division has a divisional Director of Purchases, and each plant - whether manufacturing or assembly - has its own Pur-

chasing Agent.

For instance, the Chevrolet Division has a Director of Purchases and a Purchasing Agent in its central office. But Chevrolet also has 23 plants - 12 manufacturing and 11 assembly plants. The purchasing agents at the manufacturing plants purchase all of the materials they consume. The productive supplies for the assembly plants are pur-chased at the Detroit-Chevrolet Central Office Purchasing Department. The operating and non-productive supplies for the assembly plants are purchased by the assembly plant purchasing agents.

In peacetime, the 39 divisions of GM have more than 12,000 suppliers, probably 75% of whom employ 500 or fewer people each. At present, when many of the divisions and plants are engaged in defense work, the number of suppliers is approxi-

mately 20,000.

Central Office Functions

In purchasing at the divisional level, each Director of Purchases reports to and is responsible to the General Manager of his division, and not to the staff executive in charge of procurement. His is responsible for buying all of the items which his division consumes.

Then where does the headquarters procurement department fit into this decentralized organization? The functions of this department in the Central Office have been outlined as follows:

1. To set up general procurement policies and procedures for General



Regional meeting of GM Divisional Purchasing Agents and materials control men. Members of the Central Office staff are on the dais. Though purchasing responsibility is decentralized at the division level, coordination and cooperation are essential in the administration of policies and activites.

Motors and all divisions. The policies and procedures, as set up, have nothing to do with the actual buying as such. That is, they do not tell the purchasing agents where to buy, what to buy, or how to buy. But they do insure that all matters of policy importance are handled by all the divisions in a like manner.

2. To commit for, on occasions, a few major items and raw materials such as tires, copper, brass, pig iron, conversion steel, and alumi-

3. To negotiate purchase agreements (requirement contracts) for the use of divisions, involving in most cases maintenance and operating supply items such as lamp bulbs, chemicals, etc.

4. To help the divisions work out problems generated by the Controlled Materials Plan and other governmental directives. In critical times such as the recent past, this is a major activity. For this reason, the department maintains a Washington office, and also employs at the Central Office an executive whose title at present is Administrator of Government Regulations.

5. To assist the divisions when emergencies arise which create a serious problem for them or for an individual division. To this end it occasionally calls national - or more often, regional - meetings of divisional purchasing agents and

materials control managers and assistants. When the CMP was first launched, for example, such meetings were held to review the situation and outlook and to formulate plans for uniform policies and procedures. The headquarters department also serves as a clearing house of information and can often help alleviate divisional problems by informing the division in trouble of the methods used by other divisions under similar circumstances.

6. To act as a "fireman" for any division which calls on it for material help in critical situations. In some cases, it takes over the buying and distribution of a commodity to keep the divisions from forcing prices up by bidding against one another and to insure an equitable distribution of scarce materials. An outstanding example is steel, which has been in short supply for the past several years.

7. To advise GM divisions in matters pertaining to the handling, grading, and marketing of scrap.

8. To keep top management of GM advised at all times of the material situation and outlook in the categories, particularly various steel, copper, aluminum, and other raw materials. This is usually done informally, but quite often a more elaborate presentation is made on a certain critical material for top management's consideration through



The Central Office staff has been effective in broadening the base of supply for all divisions to meet the increased requirements of defense production. This is a display of GM defense products at a recent procurement clinic, where the facilities of potential vendors were enlisted and fitted into the over-all purchasing program.

the Manufacturing Policy Committee.

Coming now to the organization and operation of the headquarters Procurement and Schedules Activities, D. F. Hulgrave is the executive in charge. He reports to J. J. Cronin, staff Vice President in charge of manufacturing. Mr. Hulgrave was for many years Manager of Purchases for Cadillac Motor Car Division. He was named director of the purchasing and salvage section of GM's procurement and schedules staff in 1948, and assumed his present duties about a year later.

In addition to his administrative duties, Mr. Hulgrave negotiates contracts with suppliers of some items for GM divisions, notably tires. GM has negotiated such tire contracts for many years. In doing so, it deals regularly with the principal tire manufacturers.

The Procurement and Schedules Department includes a Purchasing and Salvage Section, a Schedules and Statistics Section, the GM Traffic Association, the Material Procurement Section in Washington, and the Administrator of Government Regulations.

A. J. Campau is director of the Purchasing and Salvage Section, and J. J. Sherry, Jr., is assistant director. This section employs five buyers, two statisticians, and clerical personnel.

In addition to supervising the activities of this section, Mr. Campau keeps constantly abreast of market developments and prospects, particularly on critical commodities. His specialists accummulate and compile information on production, prices, availability of materials, and other subjects, digest the information and pass it on to the divisions. He gives personal attention to the non-ferrous metals markets. If he has reason to believe that the supply of a certain metal is likely to become tight or the price is likely to change, the divisions are kept advised. The divisions usually make their own commitments for these materials in line with authorized production schedules, but Corporation may make the commitments where such action is justified by conditions.

A local purchasing section has two buyers who handle the supplies and equipment required by the Central Office, Proving Grounds, GM Building Division, and other activities connected with central headquarters.

Steel Procurement

The assistant director and three buyers devote their entire time to steel. This activity began in 1946. Following World War II, there was an immense demand for cars. The GM divisions went to work to meet

this demand, only to find that there was not enough steel available to build as many cars as they had planned to produce. Presently the divisions were competing with one another for marginal steel, and making a hectic market still more hectic by so doing.

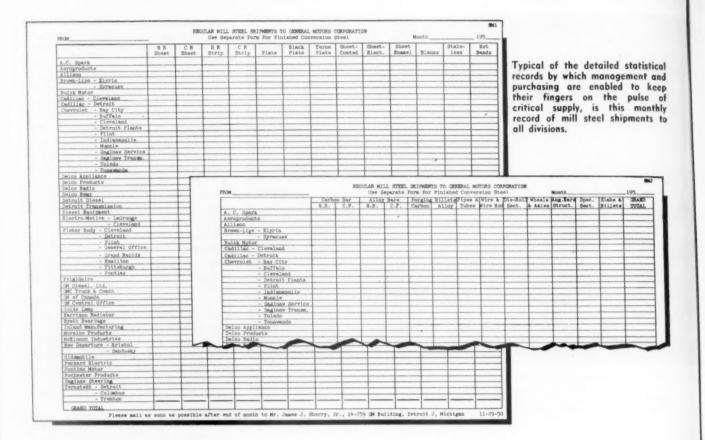
To correct this condition, GM's manufacturing staff established controls, activated the steel procurement group in the Procurement and Schedules Department, and arranged to buy all the conversion steel and to arrange with mills to supply steel to the divisions.

General Motors has entered into separate agreements with three steel producers, under which it agreed to advance a total of \$83 million for the further expansion of steel-making facilities. These arrangements made additional capacity available to GM as well as to other users. During periods of governmental control of steel, the agreed percentages are subject to considerable change. This department administers these agreements.

It also arranges for all of the conversion steel used, has it processed and shipped, and allocates it to the divisions. It also arranges for foreign steel used by GM divisions. In doing so, it works principally through the New York GM Overseas office, which keeps in touch with GM's European operations and procures the steel chiefly through them. The New York Office notifies the Central Procurement Office of what is available, then Procurement authorizes New York to issue letters of credit for the steel. It has brought many thousands of tons of bars, billets, and sheets in this way. It even went so far as to send a metallurgist to Japan to make sure that steel produced there was up to GM's specifications, and obtained a considerable tonnage of steel from that source.

During critical shortages, the steel procurement men are constantly seeking conversion steel, and going to whatever lengths may be necessary to get it and have it processed into the forms required. They take advantage of the mills' imbalances, as Mr. Sherry explains it, and go to extremes, if necessary, to keep the GM plants operating.

Mr. Sherry related several examples of this, the most extreme being a case in which they bought steel ingots in Seattle, had them converted to hot rolled bands in Los Angeles, roller levelled and cut to length in Chicago, fabricated into



frames in Milwaukee, and shipped back to Los Angeles for assembly. In many cases they furnish mills with coke, pig iron, ingot molds, or anything else they may be short of, in order to make available more semi-finished or finished steel.

When CMP went into effect, the GM divisions applied for their quotas of materials, including steel, while the Corporation took care that the combined quotas totalled up to its authorized percentage of the industry. The divisions thus got permission to buy a certain amount of steel, and the headquarters group helps them get the steel.

As the steel market eases and it is no longer necessary to buy conversion steel, the personnel of this group will probably be reduced, but it will continue to administer the mill agreements mentioned above.

Schedules and Statistics

The Schedules and Statistics Section consists of a director, P. A. Switzer, three statisticians, and clerical help. This section has two main functions:

- To schedule and keep current records of production of passenger automobiles and trucks, and some other major non-automotive products.
- 2. To keep statistical records of receipts, usage, and inventories of

both ferrous and non-ferrous met-

When there are no government restrictions, and materials are in adequate supply, the General Manager of each division and his staff plan their production schedule and submit it to the Central Office for review by management. When the schedule has been approved, the Schedules and Statistics Section forwards a copy of it to all divisions as authority for the production of the units involved. When materials are in short supply or are controlled by government regulations, this section initiates the schedule, based on an equitable distribution of the number of units that can be produced among the various divisions.

This section keeps weekly and monthly records of production steel received, used, and in inventory, and keeps similar monthly records of pig iron, copper, aluminum, and other metals, so that management is at all times currently informed as to the situation in regard to metals used in the production of all products. These reports are furnished to all interested Central Office executives. In compiling statistics on metals, records are kept not only of receipts and usage by each GM division, but also of the shipments received from each GM sup-

In addition to these regular reports, many other special reports are prepared, dealing with production data and the status of various metals. These reports aid management in determining what policy should be followed in manufacturing GM products.

Traffic Activities

The GM Traffic Association is a closely related and cooperatively working group comprising the Freight Traffic Departments of all U.S., domestic, overseas, and Canadian operations of the Corporation. It has its headquarters in the office of the Secretary of the Association. This is a section of the Procurement and Schedules Department. The staff consists of the General Secretary, a departmental supervisor, and clerical help.

This activity provides a medium for the interchange of information and ideas of interest to all divisional traffic departments; it formulates programs that will promote transportation policies beneficial to all divisions, maintains records of freight shipments of all divisions and plants of the corporation, compiles and distributes reports on these matters to both corporation and divisional management.

Freight traffic management, which (Please turn to page 324)

The Industrial Future of

ATOMIC ENERGY



By Walker L. Cisler
President
The Detroit Edison Company

Abstract of an address at the 22nd annual Midwinter Conference of the Public Utility Buyers Group, N.A.P.A., New Orleans, March 10, 1953. Mr. Cisler's paper was originally prepared for presentation at the annual meeting of the Society of Automotive Engineers, held at Detroit in January.

OUT of the vast amount of publicity that has been given to atomic energy, has come great speculation concerning possible peacetime uses and benefits of this relatively new discovery. Much of the speculation has been misleading and confusing and, in some cases, provocative of fear that sudden new developments might quickly outmode today's conventional installations and thus destroy existing capital investment.

It is well, therefore, to base our thoughts regarding the future possibilities upon practical and economic considerations, and to view the situation in the light of experience with earlier discoveries which, in their day, were just as spectacular as atomic energy is today.

Over a period of more than half a century, the automotive industry has developed remarkable motor vehicles which have substantially changed many phases of our life. Yet we still look forward to even better automobiles. The benefits of nuclear energy will be realized in the same way—slowly, through application of ingenuity, but mostly

as a result of constant hard work and perseverance. Atomic energy, through its application to the generation of electric power and to other industrial heat processes, may influence our lives radically, but perhaps by imperceptible stages extending over a prolonged period of time.

Energy and Civilization

Most of us may not pause to realize the full importance of energy in our day-to-day living and in our way of life. We know of our vast resources of coal, petroleum, natural gas (the conventional sources of stored energy), and falling water. We know how to convert these resources into the usable forms of energy such as heat, mechanical, electrical, and chemical energy. We know the chemistry and the physics of the processes and the formulae which are involved.

Energy in its various forms enters into almost every phase of our lives; we are dependent upon energy for our very existence. We should also be aware that civilization has advanced only as man has been able to harness energy, and to use it to provide more and better things. Man's use of energy is a measure of his status in the civilized world.

Because atomic energy development may bring to us a new source of energy which we hope to be able to utilize, this discovery holds great promise. The engineering profession and others face a most difficult challenge to develop the production and use of this discovery.

Atomic energy is not a new form of energy. The basic processes leading to the present developments have been active since the beginning of time.

Our knowledge of the existence of atomic energy goes back farther than most people appreciate. Scientists have realized that vast amounts of energy are inherent in the composition of matter since the facts concerning the atom were first rationalized. These theories were given great support when radium was isolated by Madame Curie in 1898. Albert Einstein conceived for us his formula concerning the possibility of splitting the atom, as early as 1905. Actual fissioning of the atom

FUEL	WORLD RESERVES	SOURCE OF DATA	UNIT	TOTAL ENERGY BTU
Crude Oil	610 Billion Barrels	Weeks and Moulten	6.4 x 10 ⁴³	35 x 10 ¹⁷
Natural Gasoline	11.5 Billion Barrels	American Petroleum Institute	6.4 x 10 ⁶	0.74 x 10 ¹⁷
Shale Oil	620 Billion Barrels	Bureau of Mines	6.4 x 10 ⁴⁵	40 x 10 ¹⁷
Natural Gas	560 Trillion Cubic Feet	American Gas Association	1000 BTU per Cu. Ft.	6 x 10 ¹⁷
Coal	3482 Billion Tons	Bureau of Mines	13,500 BTU 14,000 " 9,000 "	722 x 10 ¹⁷
TOTAL, Conv	entional Fuel	ls		80 x 10 ¹⁸
Uranium	25 Million Tons	Raw Materials Division of AEC	3.5 x 10111	1700 x 10 ¹⁸ at 1 to 1 Breeding

was first accomplished by the English scientists, Chadwick and Rutherford, in 1922. Many others made important discoveries prior to the rapid progress which began in the late 1930's.

TOTAL, Nuclear Fuel

Thorium

1 Million

Tons

Through the efforts of the Atomic Energy Commission and its predecessors, machines known as nuclear reactors have been devised for converting the energy of nuclear fission into forms which can be put to useful purposes. Many different kinds of reactors have been built and proposed, the designs being dependent upon the intended use and a wide variety of technical considerations.

Although there is reasonable

agreement as to the theory involved there is no general agreement on the most appropriate design, the most desirable type or form of the fissionable material to be used as the fuel, and innumerable other problems. This is the real crux of the problem today.

71 x 1018

1800 x 1018

Results of Nuclear Fission

The products of atom-splitting, as we now know the process, are (1) radiation; (2) fission products; and (3) a vast amount of heat energy.

A part of the radiation can be converted directly into electricity, by processes which essentially are the reverse of our present methods of producing x-rays.

Many materials, when exposed to neutron radiation become radio-active. They retain this property for varying periods of time, and are known as radio-isotopes. They are being used in medical practices, for plant and animal life studies, and for analysis and control purposes in many research and industrial operations. Their importance is certain to increase as we learn more about them.

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Industries were quick to realize the importance and the possibilities of radio-isotopes. Many organizations have been using them for several years and are actively seeking new and improved applications. This will call for continued research and development along many lines, but the results are certain to be rewarding.

At the present time, plutonium 239 and uranium 233 are the only definitely known useful fission products. It is anticipated that many peacetime applications will develop. There is belief, therefore, that they will have peacetime markets, but at a lower value than their present military value. Other useful reactor products can be expected. Their exact nature is not known, but many of the more imaginative scientists believe that the possibilities in this area are extremely great.

The really great possibilities of atomic energy development appear to lie in the industrial use of the vast new source of heat energy which has been made available. Because of the dangerous radiation which is involved when the atom is fissioned, the only practical use of this heat, in the immediate future, seems to be in the production of electric power and steam for industrial and other uses.

The Dow-Edison Project

The Dow Chemical Company and The Detroit Edison Company have jointly been engaged, for nearly two years, under a contract with AEC, in studying the possibility of using the heat of nuclear fission in industry. Within the past few months, a number of additional companies have become associated with this project. The group as now constituted includes both large and small electric power systems, together with industrial manufacturing and engineering organizations. It provides, therefore, a broad management, engineering and technical background and experience, all of which are needed to solve one of the most complicated problems of our times.

At least four other industrial groups are working on this same

problem, and the work of the AEC and its staff in its national laboratories continues. Great efforts are being exerted to keep our country in the forefront of this development, bearing in mind, however, that it would be unwise and uneconomic to pay an excess price for such power.

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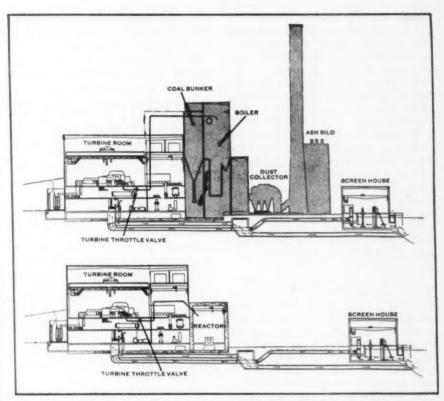
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The work on the Dow-Edison project has proceeded on the basis that the commercial use of atomic energy for the generation of electric power can be justified only when the cost of heat energy from nuclear fission is competitive with the cost of heat energy from conventional fuels.

After nearly two years' study on the project, definite progress is being made and some basic conclusions have been reached. Atomic energy, when applied to the generation of electric power, would simply furnish the heat needed to produce steam and operate steam turbine-generators. Reactors using fissionable materials as a fuel would, with appropriate accessories, take the place of the boilers and appurtenances of the present conventional thermal-electric power generating plants. The electric generating part of the station would be retained essentially in its present form if atomic fuels are used instead of present fuels.

The theory of reactors—the device in which the atom is split and the heat is released—is well advanced. Extremely large amounts of heat would be released in a very small volume and transferred at a high rate per unit of heat exchange area.

At the present time, a breeder reactor which will produce more fissionable materials than it consumes appears to be the most fitting for the generation of electric power on a widespread basis. (The breeder process, however, is not in the category of perpetual motion schemes.) Because of the pioneering work done by the AEC, it now seems possible to build a breeder reactor of commercial size, together with the necessary accessories, which could be used to produce steam for the generation of electric power, though no reactor practical for commercial application has been fully designed or built, and a vast amount of research and development is necessary before such a reactor can be an actuality. Published studies indicate that the cost of natural uranium used for fuel may be approximately \$35 per pound, and one pound, when completely used in a breeder reactor, has the heat equivalent of 1,300 tons of coal. On this



Upper diagram is a cross section of the new St. Clair Thermal Electric Power Plant of The Detroit Edison Company. Shaded area is the section devoted to steam generation, which might be replaced by Nuclear Heat Power Reactors. This represents slightly less than 50% of total plant investment, exclusive of the power distribution system. If the substitution of energy source were made, plant would appear as in the lower diagram.

premise, the cost of the heat units from these materials would be negligible in the total cost of generating electric power.

But it is unlikely that electric power generated by atomic fuels will greatly influence the cost of electricity to the consumer. Atomicfuel reactors would take the place of present boilers, which represent only 17% to 20% of the total investment in a typical electric power system; the remainder of the system would be unchanged, and the major expense of operating a power system probably cannot be substantially altered by this substitution for many years at least. The increased investment required for reactors, as compared with fuel-fired boilers, would largely offset the saving in fuel costs. After initial experience in reactor design and construction is gained, the cost problem may not be insurmountable for units having large thermal and electrical capacities.

Reactor products and byproducts may hold the key to the competitive cost problems in the production of electric power. If these have great value, and the reactor is given proper credit, then the cost of electricity might be lower than now envisaged. For the present, however, we must assume that the value of reactor products will be modest and base our studies largely on the competitive value of the available heat energy in the atomic fuel.

Legal Problems

One of the most important problems involved in the development of peacetime uses of atomic energy is the matter of ownership of materials and facilities. The Atomic Energy Act of 1946 (McMahon Act) provides that only the government may own fissionable materials and facilities for their production and utilization. All of the development work of the past ten years has been carried out by the government. The main effort was first directed toward meeting the military needs of the country, but in recent years much attention has been devoted to nonmilitary considerations.

Because of these ownership stipulations, and the need for maintaining strong security provisions, private industry has not had the opportunity to participate in the development on a competitive enterprise basis as it has in other great developments of the past. Under the law as it now stands, it is impossible for any privately owned industry, through private investment, to own fissionable materials or to construct, own and operate facilities for using

those materials which might be useful in their operations. No incentive has been provided to experiment, to assume risks, and to create new and more desirable products in this field. There has been little participation of industry in the development, except as contractors to the Commission.

Without the full participation of industry, atomic energy development cannot move forward rapidly and on a broad front. There is great need, therefore, for Congress to reconsider and modify the terms of the present legislation. If this is done, industry will respond as it has so many times in the past when new developments offered new opportunities.*

Looking to the future, if a flourishing private enterprise can be achieved in the atomic energy development, an additional advantage would be gained. This enterprise would be adaptable to the production and utilization of fissionable materials required for both peacetime and military uses. Our country's strength would then be measured, not by the production capabilities of a government arsenal (for this is indeed the responsibility of AEC), but by the production capability of a great industrial enterprise system, whose atomic products can be turned from civilian to military requirements at very short notice. The material strength of this country is its flexible production capability, which is not a drain but a strength in peacetime, and a most vital asset in time of war.

Future of Atomic Energy

There are many compelling reasons, having to do with our national security and our economic position among the nations of the world, for carrying this development forward as rapidly as possible. We should continue to press this research forward in our national laboratories, and we should bring into the effort the full strength and ability of our industrial system. We can be sure that other countries, less favorably endowed with energy resources than ourselves, will make a supreme effort in this direction.

Because of the intensity with which the use of atomic fuels for electric power generation is being studied, it is reasonable to expect rapid steps forward. The fact that designs for atomic-powered submarines are well advanced is certainly

strong evidence that the use of these fuels is possible so long as cost is not the first consideration.

We can expect that experimental electric power generating installations will progress along with these military developments. The time when electric power from atomic fuels may become available on a commercial basis is uncertain. Many of those examining the situation objectively believe that some practical results may appear in five to ten years.

In other industries, the radio-isotopes are now being used in a wide variety of analysis and control problems. They are being used to study wear of bearings and other problems in automobiles, and they are being used in many manufacturing processes to provide better materials and more economical methods. It is certain that these uses will continue to expand with time, and that industry can expect important advances from this particular phase of atomic energy.

The possible influences of the use of nuclear heat in industry seem to be indirect or secondary in nature. We know, for example, that the metallurgical processes, from the reduction of ores to the heat treatment of semi-finished parts and products, are very large users of heat. It is difficult to visualize at this stage, however, how the direct heat of nuclear fission can be applied to these processes. The radiation problem, the extremely exacting and limited conditions under which this heat can be released, and the expensive facilities required for handling atomic fuels, make direct applications of this kind appear to be technically impractical at present.

Many indirect applications of atomic energy to metallurgical processes have been suggested. For example, in the present method of converting coal to liquid fuels, onehalf of the heat energy in the coal is expended in the process, and this results in higher cost products which cannot compete with natural petroleum. If the very low-cost heat energy of atomic fuels could be used to bring about this conversion process, on a mass basis, then the synthetic fuels might be competitive with petroleum products. This could make a new source of fuel available for metallurgical processes and benefit all users of metals. In addition, it might provide a new competitive source of fuel for internal combustion engines.

The use of fissionable materials as fuels for automotive propulsion is a most intriguing thought. How-

ever, the Director of the Reactor Development Division of AEC has indicated that a reactor for an automobile would consist of a critical mass of plutonium, possibly one or two feet in diameter, surrounded by a concrete shield at least six feet thick. He suggested that such a device would hardly fit in your gas tank.

An equally important consideration has to do with costs. The average automobile, during its life, uses gasoline costing probably not more than \$1,500. It does not seem practical at present to contemplate the use of atomic fuels in an effort to economize upon this small part of the expense of operating an automobile.

There is some discussion among those best informed, however, about a group of fission products called "fips," which have remarkable properties in giving off large quantities of heat, and which may be more easily handled than plutonium or uranium 235. These would be costly materials, but there is the possibility that in five, ten, or twenty years we might be in the Buck Rogers era.

New Horizons

More than ten years have passed since it was recognized that nuclear fission is a process which can be controlled and the energy utilized. Today we are probably in a position comparable with the automobile industry of fifty years ago.

The atomic development has made available to the world a new source of energy, vastly greater than all of the world's coal, petroleum, and gaseous fuel resources. Beyond our belief that we can use atomic fuels for the generation of electric power, we cannot predict what the future may hold. We can expect that progress with the atom will, in time, influence our lives as much as has the automobile. Developments will come slowly, and in small increments, much like the annual model changes of automobiles.

The ingenuity of our scientists, engineers, and businessmen, spurred by the prospect of doing things better and earning a fair reward, will enable those engaged in atomic energy to risk, to try, to fail and to try again, and finally to succeed in making this new energy source a benefit to all mankind.

Courage and intelligence are essential in this venture, and these are ingredients which American competitive business must offer in good measure, and for which it will be amply repaid.

^{*}Legislation to this effect has been sponsored by the AEC, and was introduced in Congress in April.—Ed.

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EXPEDITING --

Partner in Purchasing



EXPEDITING RESPONSIBILITIES

- 1. Adhere to all Company policies and procedures.
- 2. Cultivate good will between suppliers and the Company.
- 3. Promote the economy of all functions attributable to efficient purchasing and effective expediting.
- 4. Correlate shipping information, and make same available to all concerned departments within the Company, as required.
- Make available to management financial commitment reports, as required.
- 6. Supervise the duties relative to Government Material Priorities; submit all required applications, amendments, progress reports, purchase order copies, etc., to Government Agencies; be accountable for the record keeping thereof.
- Obtain drawings, catalogs, etc., as requisitioned by the various departments throughout the Company.
- 8. Maintain the necessary follow-up and records required for the intercompany transfer of material by warehouse requisition.
- 9. Route minor shipments; collaborate with Traffic Department on major shipments, as required.
- Inspect manufacturing facilities to determine if delivery commitments are authentic.

By Paul F. Stolpman

Assistant Purchasing Agent Texas Gas Transmission Corporation Owensboro, Kentucky

JUST suppose that you, as a purchasing agent, through some stroke of professional ingenuity, were able to negotiate for the procurement of a prime piece of equipment on a no charge basis. Wouldn't you, be the apple of the boss's eye? You certainly would!

Of course, until such time as the anticipated delivery date arrived, it wouldn't be polite to antagonize your supplier by asking him for factual delivery information or checking on the progress of your order (commonly known as expediting) because, after all, he is giving your company something for nothing. So you wait and wonder, and hope.

When the expected delivery date fades into the past, and the equipment doesn't arrive, you have cause to change from wonder to worry. Your official welcoming committee stationed at the receiving location begins to thin out. The boss's admiration for you evaporates, and you become keenly aware that the company officers are questioning your good judgment. Naturally, you haven't made provision for an alternate source, and at this point it's pretty late to get out of the hole. Non-receipt of this essential piece of equipment causes the production line to slow down-eventually to stop. Workmen are sent home; you

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EXPEDITERS REPORT Material Classification Indicated the In

To Mr J. Nar Pinter, Sunt. Compressor Stations (accress inne Office - Commission Sections)

Akker Mr. C. F. Salvalage, Supervisor, Seginoering

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Expediter's Report Form (20" x 11") and Commodity Card.

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olf above information is not in compliance with your requirements, notify the signer immediately. Tours very truly, TELAS GAS TRANSISSION CORPORATION Paul F. Stoleman

Tracer Letter, with copy sent to receiving location.



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THIAS GAS TRANSMISSION CORPORATION Fund F. Stolpman Assistant Purchasing Agent

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Left, Construction and equipment delivery requirements must be correlated and scheduled so that the project may proceed smoothly, with deliveries made on time and a place provided for equipment

installation on arrival, Right, The Expediting Section works closely with the Traffic Unit to assure prompt and economical delivery of needed materials at the job site as required.

are no exception—you get a pink slip, too. The company, lacking production of items to sell, cannot meet its payroll, accounts receivable, loans, taxes, etc. In other words, it goes broke.

Fantastic? Of course. Such a story has never happened, never will. It has been dreamed up to emphasize the fact that in purchasing, getting the right quality and a favorable price may be quite useless unless you round out the transaction with the third basic factor—effecting delivery at the right time—on time. That, too, is a part of the job.

Synonymous with purchasing is expediting. During the recent period of shortages and escalating prices, not a few purchasing agents have had suspicions that their orders were pirated, or set back on their suppliers' production and shipping schedules, not only by reason of other companies offering higher prices or exerting more influence and pressure, but through the failure to dispatch expediters to study and check manufacturing schedules, obtain serial numbers assigned to major items, and to assist the supplier in his own expediting diffi-

But expediting is not only important in times of emergency; it is an essential part of orderly planning, scheduling and operation under any circumstances. There is no better example of the importance of effecting timely delivery than in our business of natural gas pipeline and compressor station construction, so our experience may be of some practical value.

Construction projects of this nature cost millions of dollars-sometimes exceed \$100,000,000. Expenditures of huge sums are parcelled out to pipe manufacturers, engine and equipment manufacturers, supply companies, and a variety of contractors. Obviously, these large expenditures are estimated and budgeted in advance. But it is vitally important that management shall know when these huge sums of money will be required, so as to assure the availability of cash as obligations become due. Keeping management advised on the material cash outlay is best performed by a well organized and well informed Expediting Section, since all purchase orders are recorded and delivery fluctuations are discovered during the expediting operation.

Progress Depends on Expediting

Material of numerous types and descriptions, coming from all sections of the country, go into the make-up of a natural gas compressor station. The actual construction extends over a considerable period of time. There is a sequence in the order in which the various items will be required. One type of material is required for incorporation in the project before

another item can be used or installed; sometimes this is a matter of days, occasionally it is a matter of months. The Expediting Section must be in a position to evaluate these situations, must make frequent visits to the various locations to check construction progress, give an ear to the tales of woe regarding material shortages as reported by the various construction superintendents, explain the reasons for delay, and even suggest available substitutions or alternatives to keep the construction going.

We have a clause appearing on and made a part of our formal purchase order, reading as follows:

IMPORTANT—This order is subject to expediting and/or inspection by a company representative who shall have free entry at all times while work is being performed to all parts of Manufacturer's works which concern the manufacture of the material ordered as well as the works of all subvendors furnishing material for this order. Suborders placed for material to complete this order shall bear this notation and copies of such suborders shall be furnished to the company representative.

We have never received any objection to this clause as a part of our agreement.

Effective expediting is based on factual knowledge of schedules and needs, so that buyer and supplier may work together to insure a

TERAS GAS TRANSMISSION COMPORATION
FINANCIAL COMMITMENTS
1952 PIPE LINE COMSTRUCTION MATERIAL

. 0.			ANTICIPATED MATERIAL D.LIVERT AND BOLLAR COMMITMENTS IN THE MONTHS OF							
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OHAMD TOTAL 11,625,000

Report to Management, showing Schedule of Dollar Commitments.

smoothly flowing operation. It is of prime importance never to "Cry Wolf" to a supplier when the actual emergency need does not warrant a special plea. Mutual confidence and good relations cultivated between expediters and suppliers determine the success or failure of expediting, regardless of the merits of a company's purchasing policies and procedures. Where a buyer has one or two contacts with a supplier, expediting may have dozens.

Progress Reports Distributed

Antagonizing manufacturers almost invariably retards delivery or tends to decrease quality. When a trip to a supplier's plant is warranted, we find it helps to accelerate delivery if photographs of our construction progress are displayed as evidence of our sincerity. All major suppliers are placed on a mailing list to receive a printed monthly "Pipeline Progress Report".

Our management makes it a practice to recognize the cooperation of contractors and suppliers. It is not uncommon for one of our officials to address a complimentary letter to an official of a supplying company, taking notice of a job or service well done by his company, by a division, or by an employee.

Routine operations cannot be ignored during construction. Gas delivery commitments must be met. Engine spare parts, maintenance items, etc., are all intrinsic to a continuing and efficient operation. To

assure the success of both construction and operational material deliveries and serve as a guide to all employees, we believe that expediting procedures and forms, clearly defined in writing, have a definite place in the Purchasing Manual. In our case, we have found it advisable to issue the expediting section of the manual in separate booklet form. It includes the job specifications for the Assistant Purchasing Agent (who is responsible for expediting) and for the positions of Expediter and Assistant Expediter; a statement of expediting responsibilities; standard procedure instructions for expediting of construction and operational materials; and reproductions of the key forms, properly filled out for a representative specimen transaction, to illustrate these procedures.

The procedural instructions are as follows:

A. Major Construction

1. The Expediting Section copy (blue) of the formal Purchase Order (Form TG-25) will be directed to the Section immediately Expediting after the Purchase Order has been written. Upon receipt, all pertinent information will be posted on the Material Classification Cards (Form Pdx 4) and will be filed according to job location. Subsequently, this information will be posted on the Expediter's Report (Form Pdx 1). If time permits, a Tracer Letter (Form Pdx 2) will be mailed to the supplier; a copy of the Tracer Letter will be retained in a daily punch-

up file. Upon return of the Tracer Letter from the supplier, it will be incorporated with the Expediting Section file copy of the Purchase Order. The Tracer Letter Copy previously retained in the punchup file will then be forwarded to the material receiving location with all the information furnished on the original Tracer Letter. When received by the field location, the Tracer Letter Copy will be filed with the applicable Purchase Order copy. The Expediting Section's punch-up file will be reviewed daily. Tracer Letter Copy will be filed for punchup accordingly, depending upon the urgency of each particular order. The Expediter's Report (Form Pdx 1) will be originated for each Com-

1) will be originated for each Compressor Station, a pipeline section/spread, etc., under construction. A supplemental copy will be forthcoming not later than at 2-week intervals thereafter, until the construction project is consummated.

3. When a Purchase Order is completed (all material accounted for one plated for one plated for one plated for one plated (all mat

3. When a Purchase Order is completed (all material accounted for on the job site), it will be indicated as "Completed", along with the Receiving Report number, on the Expediter's Report, and will not appear on the Report thereafter.

4. Recipients of the Expediter's Report will be:

a. Original to Purchasing Agent and buyer for initialing (to be returned and incorporated in the Expediting Section file).

b. Duplicate to department concerned (Engineering, Compressor, etc.).

 Field Clerk—to be initialed by the Job Superintendent before filing.

d. Contractor—if required

e. Field Engineer if required

f. Extra if required.

B. Operational (Spare parts, tools, stock items)

 (Same as for Construction materials, except that no Expediter's Report form is used. The Tracer Letter and copy are the key forms on opera-

tional items.)

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2. To insure the success of this procedure, Company Field Personnel should review the Tracer Letter Copy (Form Pdx 2a) immediately upon receipt and advise the Exditing Section if information appearing thereon is not satisfactory. If not informed to the contrary, the Expediting Section will presume that the delivery information on the Tracer Letter Copy is satisfactory.

C. Applicable to both Construction and Operational Procedures

 If time does not permit the Tracer Letter, a telegram or telephone call will be instigated; the information will be relayed immediately to the interested parties (if so required) and will be posted on the Material Classification Cards and the forthcoming Expediter's Report.

a. In cases of the above, all names, dates, and other pertinent information will be confirmed to the Vendor; a copy of the correspondence will be incorporated with the Expediting Section file copy (blue); and the copies will be channeled to interested parties for filing, with their respective copy of the Purchase Order.

2. In many cases, close cooperation between the Traffic Unit and the Expediting Section is imperative at this point of expediting. If it is ascertained that a shipment is materializing in the immediate future,

the Traffic Unit will be advised by the Expediting Section of all pertinent shipping information available on Notice to Traffic (Form Pdx 5). A copy of this form letter will be retained with the Expediting Section file copy of the Purchase Order. As soon as material is shipped, it will become the responsibility of the Traffic Unit to expedite the carrier, trace shipments, handle damage claims, etc. However, the Expediting Section reserves the right to authorize deviations from the shipping instructions set forth on the Purchase Order to the extent of Parcel Post, Express Air Express and Air Freight, LCL and truck shipments not exceeding 500 pounds. Shipments exceeding 500 pounds will be referred to the Traffic Unit for routing, as well as the decision to dispatch Company-owned equipment in preference to commercial carriers. The Traffic Unit will be responsible for tracing all shipments.

3. All Receiving Reports (Form TG-472) will be directed to the Expediting Section, and the information appearing thereon will be posted on the Material Classification Cards and Expediter's Reports. Any discrepancies noted upon receipt of material in the field must be noted in red on the original Receiving Report—the Expediting Section will be charged with the responsibility of bringing this to the attention of the

Buyer concerned.

4. When communicating with the Expediting Section, have the following information available to facilitate prompt action:

a. Vendor's name;

b. Purchase Order number;

c. Items in question;

d Expediter's Report Issue Number (if applicable).

To guarantee the success of Texas Gas Transmission Corporation expediting procedure, all requisitions should be channelled to the Purchasing Department with a specific date entered in the space provided for "Date Wanted". (Example: Date Wanted—May 15, 1953. Not: "Rush, soon as possible, etc.") Expediter's Report as well as Tracer Letter Copy should be analyzed by all recipients, and any discrepancies or items of special importance should be brought to the attention of the Expediting Section immediately. To avoid duplication of effort, it is essential that all requests pertaining to delivery of material be directed to the Expediting Section.

Government Liaison Included

If and when required, Government liaison related to priorities is also logically grouped within the Expediting Section. This conclusion is based on the fact that the majority of reports ultimately required are concerned with material delivery commitments and status, progress reports, and applications to accept delivery of material.

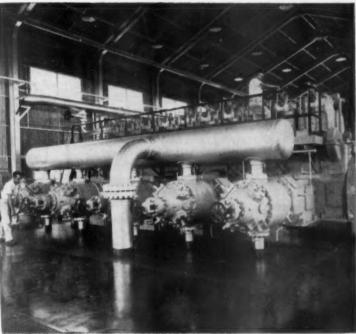
Training and experience received in the Expediting Section are definitely requisite to the qualifications of future Buyers and Purchasing Agents. Purchasing sense plus expediting sense add up to dollars saved. These are the dollars (and the sense) that justify a Purchasing

Department.

Left, Receipt and acceptance of the material clears both the Expediter's Report and the Purchase Order.

Right, The same techniques of expediting give assurance of adequate stocks of spare parts and operating supplies.





Express and Implied Warranties in Equipment Sales

By Albert Woodruff Gray

SECOND hand bulldozer was sold in Kentucky for \$3,500 under a contract that provided, "Bulldozer is sold 'as is' and 'where is' with no guarantee or warranty implied, spoken or written, of any kind," and a ten day note was given for the price.

A month later the note had not been paid and a chattel mortgage was given as security in which the bulldozer was described as "the same property heretofore sold." When, a few weeks, later nothing had been paid, an excavating contractor suggested to the seller of this equipment that he could use the bulldozer on a job and that he would assume the payment for the

machine.

Buyer Assumes Contract

An agreement was made between the seller and this purchaser, to which the first buyer was made a party, which provided that, "For and in consideration of the agreements and assignments made herein and the assumption by the party of the first part of a certain contract for the sale of certain machinery which is set forth and described in a mortgage . . . that this machine is this day turned over to the said party of the first part who hereby agrees to keep up and pay the said indebtedness as set out in the mortgage and will pay the same according to the contract entered into. . ."

After this transfer the bulldozer was used on the excavating job of this second purchaser. However no payment was made, and the buyer complained to the seller that the machine was worthless.

When suit was brought for the \$3,500 still unpaid on the machine, this excavating contractor set up as a defense that he knew nothing of

bulldozers when he purchased this equipment but that he had told the seller the work for which the machine was intended, and that the seller had warranted the bulldozer to be in good working condition and suitable for general excavation work. Further, he had relied on such representations which were false and the machine was worthless.

In any sale that is not modified by the terms of the sale contract or by circumstances peculiar to the transaction, when a buyer tells a seller the purpose for which he is buying an article the law imposes on the seller a warranty that the goods are reasonably fit for that purpose.

The buyer against whom the action for the price of this bulldozer was brought, based his defense on this principle of law. Under the sales agreement, however, the buyer here had agreed to pay according to the terms of the contract originally made with the first purchaser, to whom the bulldozer had been sold "as is and where is".

Deciding against the purchaser and in favor of the seller, the Kentucky court said of the liability of



"Got a nice order, eh?"

REFERENCES

Dreyer-Whitehead & Goedecke v. Land, 216 S.W.2nd 413, Kentucky

Johnson v. Waisman Bros., 36 Atl. 2d 634, New Hampshire

Hockensmith Contracting Co., 25 N.Y.S.2d 636, New York

Ward v. Hobbs, 4 Appeal Cases 13 (English)

Williston on Sales, sec. 239

Myers v. Land, 235 S.W. 2d 988

Jones v. Mallon, 101 Pac. 2d 332, Washington

this buyer for payment, that he was simply stepping into the shoes of the previous purchaser.

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"He was acquiring title to the same machine, for the same price, and undertook to pay the obligation under the identical terms set out in the mortgage. He could not accept the benefits of this contract without assuming its unfavorable incidents. Under the original terms of sale all warranties were expressly excluded."

No Basis for Damages

The sale of an article "as is", the provision in the sale agreement of this bulldozer, absolves the seller from any liability for the breach of a warranty of fitness of the article for the purpose for which it is bought. A New Hampshire court recently said of this phase in relation to such a warranty in the sale of a steam shovel:

"The purchaser was not entitled to assume that the shovel would do the work in question. The owner sold it 'as is' and this term when contained in a memorandum of purchase and sale means that the seller sells and the purchaser buys the specific chattel in its then existing physical and mechanical condition without warranty as to quality or fitness for a particular purpose."

Here a steam shovel, twenty-five or thirty years old, had been sold to a scrap dealer for \$75. A truckman seeing this scrapped shovel said he could use it on a fill-in job. He paid \$25 down and received from the scrap dealer a memorandum, "May 29. Manchester, N. H. Sold to . . . one steam shovel located at Amoskeag Industries Yard as shown, as is and where is, for two hundred twenty-five (\$225.00) Dollars. Received \$25 on account

and \$200 to be paid before shovel is moved."

Two or three weeks later, no further payments having been made, the buyer offered to pay the remaining \$200 and the dealer refused to take the money, saying that the deal was off.

In the suit brought by this buyer for the damages to which he claimed he was entitled for the dealer's breach of contract in the delivery of the shovel the court pointed out that in a sale with the terms "as is, as shown and where is", the buyer could rely on no assurance or warranty of the seller that the shovel would perform the work for which it was intended, consequently no damages could be claimed on the basis of the work that the buyer hoped to do with it.

Contradictory Clauses

In these cases in the Kentucky and New Hampshire courts, the sellers protected themselves against any liability for breach of this warranty which the law implies, that the article is fit for the purpose for which it is bought, by the stipulation that the article is sold "as is". Often this same advantage is secured by writing into a sales contract another warranty that is inconsistent with this warranty of fitness implied by the law, which also serves to absolve the seller from liability of this character.

A New York contracting firm leased, with an option to purchase, sheet metal piling to be used in the construction of a sewage plant. Under the contract with the steel company supplying the piling, the contractor agreed to check the material promptly upon arrival and to report any shortage or damage, any defective material to be replaced by the

steel company, which should have no further liability for "shortages, defective materials or damage from the use or handling of materials".

According to the contractor, when this piling was delivered it was neither in good repair or driveable condition, the locks failed to hold, and the structure leaked. As a consequence the contractor was compelled to secure other piling. The contractor sued the steel company for damages, basing its case on the claim that the steel company had before making the contract warranted that the piling and locks would be fit for the job, that they could be driven properly and would hold in place.

The court held here that the provisions in this contract by which the steel company agreed to replace defective materials or shortages was a substitute for this implied warranty of fitness and the contractor could not recover.

"There can be no doubt that the provisions by which the steel company represented to the contractor that the materials were suitable for the purpose for which the contractor intended to use them completely negatives and renders unenforceable the alleged warranties that the piling and locks were suitable for the work contemplated."

Many a buyer signing a purchase contract has found to his grief and loss a phrase tucked neatly away in the terms of a sales agreement that is a substitute for this implied warranty of fitness, as in this instance, or else the classic rejection of any warranties or agreements except those expressly set out in the contract.

"With All Faults"

An Englishman in the middle of the last century had a herd of pigs which he sold "with all their faults". The purchaser paid for the pigs. After the sale it was discovered that the pigs had typhoid fever; the other pigs in the buyer's herd were infected and all but one died.

The action by the owner of these dead pigs against the seller was decided against the buyer and that decision appealed to the House of Lords. In affirming the decision on the ground that there was no warranty with this sale, it was said:

"Where an article is sold with all its faults, I think it is quite immaterial how many belong to it within the knowledge of the seller unless he used some artifice to disguise them and to prevent them from being discovered by the purchaser.

"I may be possessed of a horse I know to have many faults and I wish to get rid of him for whatever sum he will fetch. I desire my servant to dispose of him and instead of giving a warranty of soundness, to sell him with all his faults. Having thus laboriously freed myself from responsibility am I to be liable if it be afterwards discovered that the horse was unsound? Now the seller of these pigs did precisely what has been held to protect a vendor against liability for all loss.

"We must deal with the law as we find it even though we might desire in cases of bargain and sale to compel more full and candid state-

ments."

This implied warranty of the law may thus be set aside by a frank disclaimer of any responsibility by selling as did the owner of these pigs "with all their faults", or by the substitution of a less onerous warranty, thus affording an escape from hidden liabilities and close the door to damage suits before the horse has fled the barn.

The law in relation to unrestricted sales and the freedom of the seller from liability in the sale of worthless goods has well defined limits. A contract for the purchase of a machine for the manufacture of concrete blocks for building construction contained the clause, "There are no understandings, representations or warranties expressed or implied, not specified herein respecting this order. The warranties, provisions, terms and conditions on the reverse side hereof are expressly made a part of this agreement."

On the back were special provisions limiting the seller's liability to defects in material and workmanship to making good at its factory any defective parts. "In short," said the court in its description of this agreement, "this contract undertakes to limit and to avoid practically every sort of warranty except the very limited one stated. There is no remedy provided in case the machinery is worthless."

The price which the purchasers had paid was \$5,524.57. Later they sued for the recovery of this money claiming the seller had misrepresented the machine and its fitness for the purpose it was bought, namely, the manufacture of merchantable concrete blocks. The manufacturer

based its defense on these clauses releasing it from any liability for breach of warranty.

The appellate court in Kentucky, affirming a judgment in favor of the purchasers for the money that had been paid, said, "Where there is a complete failure of a machine to accomplish the purpose for which it was designed, that is, to manufacture a merchantable product, it is much more than a breach of an implied warranty of suitability or fitness for a particular purpose. It is not a merchantable article if it will not do what it was intended to do. There has been no delivery of that which is bought."

The law relating to these warranties, express and implied, has been summarized by a famous legal authority, in so far as it relates to an avoidance by a seller of liability

for their breach.

"The ordinary way to do this is for the seller to state that the buyer must take the goods as they are. Any words or conduct tending to show that this was the intention of the parties will prevent a warranty from being implied but will not exclude an express warranty by words of description or otherwise."



To the industrial salesman, banging on unsympathetic portals, battered in spirit and feeling sorry for himself, here is a ray of comfort.

Somebody loves him.

To prove it, Standard Pressed Steel Company, of Jenkintown, Pa., has brought out a booklet emphati-

"We Love Salesmen!"

cally entitled, "We Love Salesmen!" The cover design emphasizes this theme, portraying the welcome mat being spread for the visitor and the glad hands extended.

The booklet, of vest pocket size and done with humorous cartoons in two colors, is given to all salesmen calling on the purchasing department at SPS.

Additionally, SPS' own salesmen throughout the country will be dropping it on the desks of the purchasing agents they visit, to show how things are done at Jenkintown.

A center-spread map in the booklet shows how the plant can be reached by automobile, where the special visitors' parking lot is located and its position in relation to the purchasing department entrance.

In part, the booklet reads:

"We love salesmen here at SPS. They maintain our vital supply lines, exert themselves to meet our specific needs, help to keep us posted on new materials and prod-

ucts. And we love salesmen because—well, maybe we flatter ourselves, but we like to think we're salesmen, too, here at SPS."

So that salesmen with an obviously inappropriate product will not waste time waiting, the booklet lists generally what the company purchases to produce its lines of fasteners, steel shop equipment, and aircraft specialties. The list also includes other materials and supplies required to operate shops and offices.

On the inside back cover is a list of the key men in the purchasing department, one of whom the visitor presumably wishes to see, with a note as to the type of materials each one handles.

"Step right in," the booklet urges salesmen. "You'll find here the little conveniences—a restful waiting room (though we hope you won't have to wait), a place to hang your hat, washroom and telephone service."

The Pulse of Business

JUNE, 1953

PURCHASING'S Summary of economic conditions

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Almost all signs indicate that there's still a lot of momentum in the boom - but the number of those questioning whether it can go on much longer is growing. Employment is high, and the resulting volume of payrolls has kept retail sales going at a good pace - particularly in automobiles, where there had been fears that a slump in buying was to grow into serious proportions. But the feeling persists that sometime in the fourth quarter - and perhaps before - the pace of industrial activity is bound to slacken.

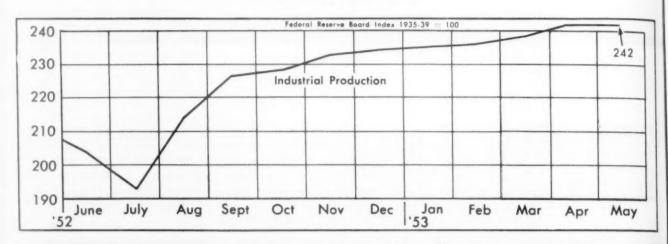
Among other signs, developments in the metals markets seem to point toward a slowing down in the business pace. Although price rises have been announced on extras and certain items and demand is still high, steel may not be as tight as it appears for too long. Production is going at a terrific pace, with the new record for shipments set in March topping the previous high, set last October, by 281,000 tons. The break in steel scrap prices has also been interpreted in some quarters as a sign that production will be cut back in the winter months. It should be noted, however, that more than a few trade authorities look on this view as unwarranted pessimism.

Supply in other important metals is improving rapidly. Alltime daily, monthly and quarterly records were broken by the
U.S. aluminum industry when March output was complete, and
the Aluminum Association says more new records can be expected
in the coming months. No price break is expected, however.
More and more copper is appearing, too, as foreign demand
drops and output increases. Chances are that the softening
in prices that has resulted is not quite complete. Both
lead and zinc prices are depressed, with supplies more than
adequate. Tin prices dove sharply last month, but rebounded
on news of the invasion of Laos.

The part sound purchasing can play in keeping the economy stable in the current uncertain, contradictory situation, is recognized in the current National City Bank of New York monthly letter: "The moderation of industrial buying policies and of speculative activity generally is an element of strength in the outlook for which ther is reason to be thankful."

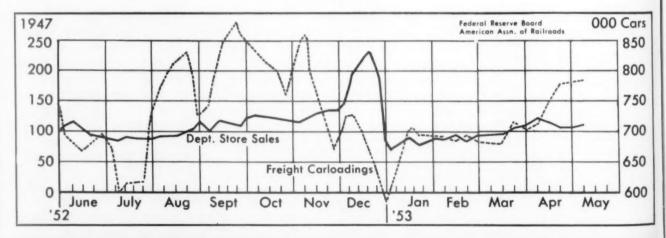
THE PULSE OF BUSINESS

PRODUCTION



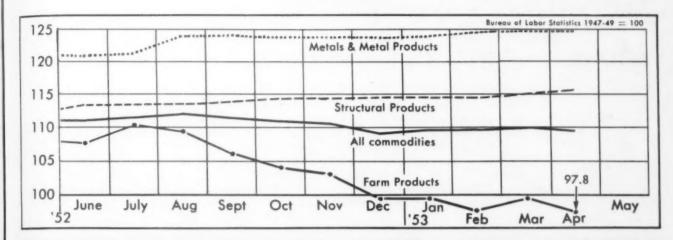
	BASE I	.ATEST	MONTH AGO	YEAR AGO	% OF CHA	NGE IN YEAR
Industrial Production Index	1935-39==10	0 241	242	216	- 0.4	+11.5
Steel Production (Weekly)	000 net tons	2,262	2,180	1,775	+ 3.6	+27.4
Electric Power Production (Weekly)		7,897	8,001	7,039	- 1.3	+12.2
Bituminous Coal Production (Weekly)	000 net tons	8,750	8,420	8,552	+ 3.9	+ 2.3
Auto, Truck & Bus Output (Weekly)		175,038	163,331	118,326	+ 7.1	+47.9
Petroleum Output (Daily Average)		6,183	6,171	6,203	+ 0.2	_ 0.3

TRADE



	BASE	LATEST	MONTH AGO	YEAR	% OF CHA	ANGE IN YEAR
Dept. Stores Sales Index (Fed. Res.)	1935-39	=100 113	97	111	+16.5	+ 1.8
Commercial Failures (Dun & Bradstreet)		169	171	150	- 1.1	+12.6
Freight Carloadings	cars	781,499	721,139	744,724	+ 8.3	+ 4.9
Miscellaneous Carloadings	cars	396,803	376,670	366,670	+ 5.3	+ 8.2

PRICES



	BASE	LATEST	MONTH . AGO	YEAR AGO	% OF CHAN	NGE IN YEAR
All Commodities (BLS)	1947-49==10	00 109.4	110.0	111.8	_ 2.1	- 0.5
Farm Products			99.8	108.7	10.3	- 2.3
Metals & Metal Products	1947-49=10	00 125.0	125.5	122.5	- 2.0	+ 0.4
Structural Products	1947-49=10	00 116.8	115.1	112.8	+ 3.5	+ 1.5
Steel Billets (Pittsburgh)	net ton	\$59.00	\$59.00	\$56.00	0	+ 5.3
Steel Scrap, heavy melting, Pitts	net ton	39.50	42.50	43.09	— 7.0	- 7.4
Copper, electrolytic	lb.	$.291/_{2}$ — $.30$.30	:241/	0—1.6	+22.4
Rubber (rib-smoked sheets)	lb.	.25	.245/8	.481/	+ 0.4	-27.8
Wheat, No. 2	bu.	2.693/8	2.691/8	2.745/	+ 0.1	- 1.9

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+11.5 +27.4 +12.2 + 2.3 +47.9 - 0.3

Cars B50

300

750

700

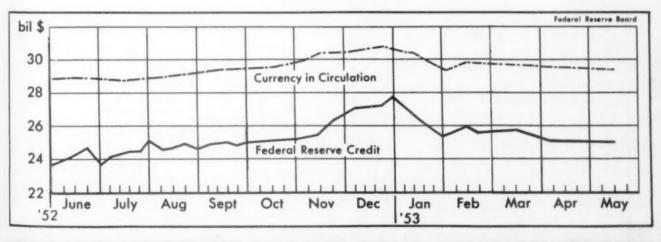
550

600

EAR

- 1.8 -12.6 - 4.9 - 8.2

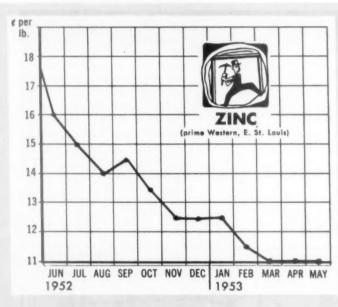
FINANCE

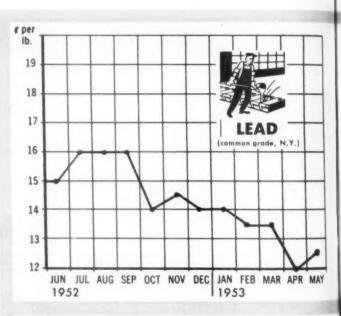


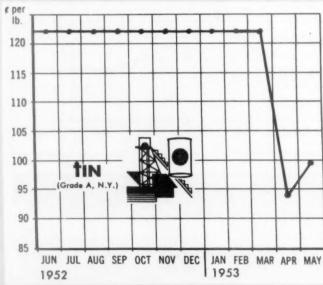
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CH MONTH	IANGE IN YEAR
Stock Prices (Standard & Poor's)		197.7 9.718	197.8 8.844	189.0 8.162	- 0.1 + 9.8	+ 4.6 +19.1
Federal Reserve Credit Currency in Circulation	mil \$	25,443 29,863	25,549 29,753	24,067 28,523	-0.4 + 0.3	+ 5.7 + 4.7

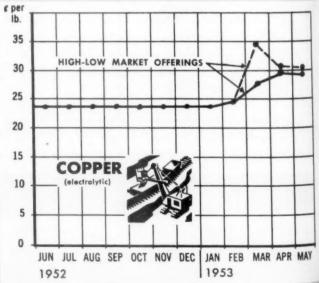
Uncertainty Keeps Prices Mixed; Trend Is Downward

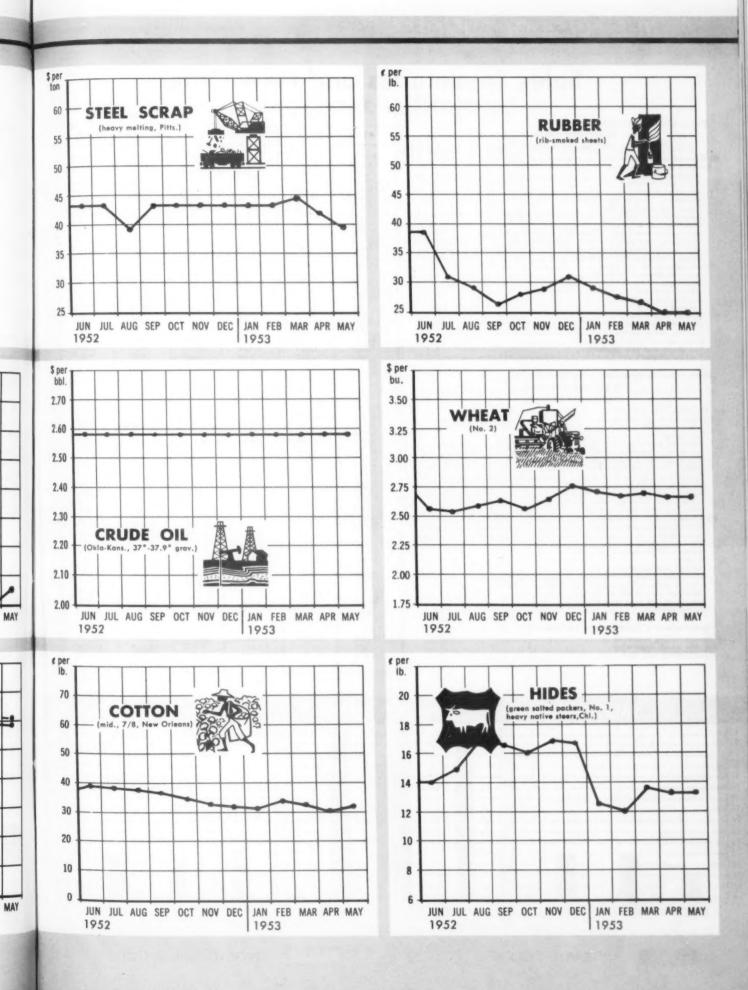
Possibilities of peace in Korea, plus the overall "peace offensive" of the Soviet Union, have affected a wide range of commodity prices. The assumption is that an inevitable result of such activities will be a downturn in defense production—although it is clear that this country intends to maintain a strong military position for years to come, regardless of what happens in Korea. Metals have shown a mixed trend — with declines in non-ferrous, but boosts in steel. One significant change in price being closely watched is the drop in scrap. This is often taken as portending a decrease in steel production—and thus in overall industrial output.









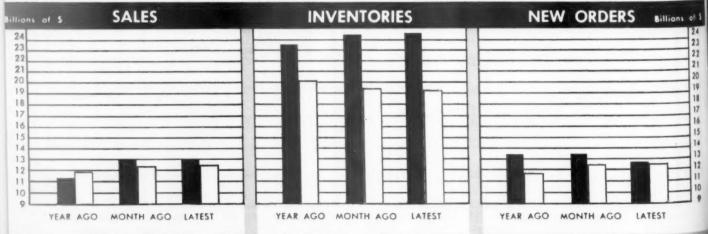


THE PULSE OF BUSINESS

Sales, Inventories and New Orders

h	23,465 11,676 2,100 1,777 1,238 2,060 1,826 923 362 596 518 255 623 11,789 3,191 457 309 1,084 1,143 234 663 667 678 1,532 2,059 438	24,276 11,913 2,048 1,287 1,259 2,053 1,920 3,62 727 497 310 629 12,363 3,293 545 344 1,151 1,260 288 682 691 1,558 2,114 438	24,292 12,195 2,082 1,397 1,256 2,138 2,068 817 305 721 509 312 590 12,097 3,211 478 306 1,108 1,108 1,046 299 736 725 1,667 2,014 507	February (r) 25,360 13,019 2,115 1,481 1,532 2,204 2,164 837 315 766 571 311 723 12,342 3,314 465 333 1,113 1,038 1,038 1,038 1,113 1,038	25,428 13,035 2,127 1,463 1,554 2,093 2,350 801 359 705 581 331 671 12,392 3,357 530 324 1,140 1,012 283 708 727 1,742 2,063
55 52 53 56 59 70 77 73 53 54 57 77 53 53 53 53 53 53 53 53 53 53	23,465 11,676 2,100 1,777 1,238 2,060 1,826 923 362 596 518 255 623 11,789 3,191 457 309 1,084 1,143 234 663 678 1,532 2,059	24,276 11,913 2,048 1,287 1,259 2,053 1,920 362 727 497 310 629 12,363 3,293 3,293 3,44 1,151 1,260 288 682 691 1,558 2,114	24,292 12,195 2,082 1,397 1,256 2,138 2,068 817 305 721 599 312 599 12,097 3,211 478 306 1,108 1,046 299 736 725 1,667 2,014	25,360 13,019 2,115 1,481 1,532 2,204 2,164 2,164 2,164 337 315 766 571 311 723 12,342 3,314 465 333 1,113 1,038 307 722 754 1,715 2,081	25,428 13,035 2,127 1,463 1,554 2,093 2,350 801 359 705 581 331 671 12,392 3,357 530 324 1,140 1,012 283 708 727 1,742
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32 33 36 59 77 70 77 77 84 84 79 77 75 33 33 33 33 33 33 33 34 34 34 34 34 34	11,676 2,100 1,777 1,238 2,060 1,826 923 3662 596 518 255 6623 11,789 3,191 457 309 1,084 1,143 234 663 678 1,532 2,059	11,913 2,048 1,287 1,259 2,053 1,920 819 362 727 497 310 629 12,363 3,293 545 344 1,151 1,260 288 682 691 1,558 2,114	12,195 2,082 1,397 1,256 2,138 2,068 817 305 721 509 312 590 12,097 3,211 478 306 1,108 1,046 299 736 725 1,667 2,014	13,019 2,115 1,481 1,532 2,204 2,164 837 315 766 571 311 723 12,342 3,314 465 333 1,113 1,038 307 722 754 1,715 2,081	13,035 2,127 1,463 1,554 2,093 2,350 801 359 705 581 331 671 12,392 3,357 530 324 1,140 1,012 283 708
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99 77 76 84 57 99 226 330 99 358 331 51 51	1,826 923 362 596 518 255 623 11,789 3,191 457 309 1,084 1,143 234 663 678 1,532 2,059	1,920 819 362 727 497 310 629 12,363 3,293 545 344 1,151 1,260 288 682 691 1,558 2,114	2,138 2,068 817 305 721 509 312 590 12,097 3,211 478 306 1,108 1,046 299 736 725 1,667 2,014	2,164 837 315 766 571 311 723 12,342 3,314 465 333 1,113 1,038 307 722 754 1,715 2,081	2,350 801 359 705 581 331 671 12,392 3,357 530 324 1,140 1,012 283 708 727 1,742
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30 92 93 58 31 51 02	457 309 1,084 1,143 234 663 678 1,532 2,059	545 344 1,151 1,260 288 682 691 1,558 2,114	478 306 1,108 1,046 299 736 725 1,667 2,014	465 333 1,113 1,038 307 722 754 1,715 2,081	530 324 1,140 1,012 283 708 727 1,742
92 93 58 31 51 02 15	309 1,084 1,143 234 663 678 1,532 2,059	344 1,151 1,260 288 682 691 1,558 2,114	306 1,108 1,046 299 736 725 1,667 2,014	333 1,113 1,038 307 722 754 1,715 2,081	324 1,140 1,012 283 708 727 1,742
93 58 31 51 02 15	1,084 1,143 234 663 678 1,532 2,059	1,151 1,260 288 682 691 1,558 2,114	1,108 1,046 299 736 725 1,667 2,014	1,113 1,038 307 722 754 1,715 2,081	1,140 1,012 283 708 727 1,742
58 31 51 02 15	1,143 234 663 678 1,532 2,059	1,260 288 682 691 1,558 2,114	1,046 299 736 725 1,667 2,014	1,038 307 722 754 1,715 2,081	1,012 283 708 727 1,742
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02 15 49	678 1,532 2,059	691 1,558 2,114	725 1,667 2,014	754 1,715 2,081	727 1,742
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			2,014		2,063
06	438	438	507	400	
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37	43,578	43,824	43,766	43,848	43,771
01	23,835	24,292	24,392	24,480	24,558
82	3,165	3,122	3,156	3,080	3,038
38	2,401	2,424	2,439	2,420	2,439
74	3,032	3,096	3,120	3,137	3,157
65	5,287 2,853	3,009	3,017	3,050	5,463 3,116
24	2,455	2,576	2,566	2,609	2,630
49	543	518	525	544	532
58	1,054	1,066	1,072	1,076	1,077
03	852	850	872	890	901
35	785	808	809	808	788
04	1,408	1,412	1,420	1,422	1,417
36	19,743	19,532	19,374	19,368	19,213
17	3,450 1,202	3,332	3,312	3,378	3,334
		1,164			1,737
					2,588
			1,689		1,625
	545	548	549	534	551
	974	1,001	990	992	998
	775	758			743
		2,968			2,885
	2,805 879	936	915	887	2,642 n.a.
	22.788	24,466	24,270	25,749	25,249
865			12,080	13,357	12,794
404	11,134	12,011		1 12 302	12,454
,7,65,07,9	,685 ,772 ,650 587 ,032 ,772 ,998 ,602 865	.685 1,742 ,772 2,743 ,650 1,618 587 545 ,032 974 772 775 ,998 3,009 ,602 2,805 865 879	.885 1,742 1,778 ,772 2,743 2,654 ,650 1,618 1,665 ,887 545 1,665 ,032 974 1,001 ,772 775 758 ,998 3,009 2,968 ,602 2,805 2,727 ,865 879 936 3,404 22,788 24,466 2,171 11,134 12,011	.885 1,742 1,778 1,773 .772 2,743 2,654 2,606 .650 1,618 1,665 1,689 .887 545 548 548 .032 974 1,001 990 .772 775 758 757 .998 3,009 2,968 2,915 .602 2,805 2,727 2,716 .865 879 936 915 3,404 22,788 24,466 24,270 2,171 11,134 12,011 12,080	.685 1,742 1,778 1,773 1,738 1,772 2,743 2,654 2,606 2,618 1,650 1,618 1,665 1,689 1,683 587 545 548 549 534 534 772 775 758 757 746 758 757 746 2,805 2,727 2,716 2,713 865 879 936 915 2,894 879 936 915 887

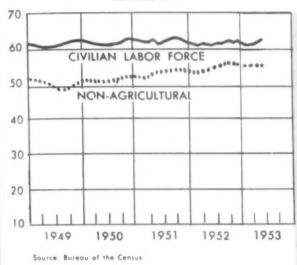




Economic Indicators

EMPLOYMENT

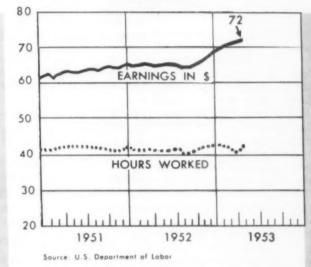
(in millions)



Total employment remains high as the number of jobs increased about 500,000 in March. Record high is 62,600,000.

AVERAGE WEEKLY EARNINGS AND HOURS

MANUFACTURING



Average workweek in both durable and non-durable goods manufacturing rose, and brought average earnings up almost one dollar.

PERSONAL INCOME

(billions of dollars)



22

20

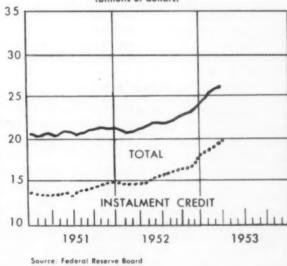
14 13

12 11 10

A \$1½ billion rise in personal income resulted largely from the continued advance of private-industry payrolls.

CONSUMER CREDIT

(billions of dollars)



The above figures are all new, and represent a complete revision, based on new Federal Reserve Board concepts and methods.

Straws in the Trade Wind

- GROSS NATIONAL PRODUCT RISES Gross national product of the United

 States which means the total output of goods and services rose \$2 billion, at annual rates, during the first quarter of
 1953, according to the Department of Commerce. The quarterly
 total was \$361 billion, an all-time high. The 1952 total for
 the same period was \$340 billion.
- INVENTORIES STABLE Business inventories were relatively stable in the first few months of 1953, following the rapid expansion experienced in the final quarter of 1952. Total stocks held by manufacturers, wholesalers and retailers, according to the Commerce Department's "Survey of Current Business", have a book value of \$75 billion, are generally balanced and roughly in line with current sales. The basis for wide inventory movements if sales continue at the present high rate does not appear to be present, the article states.
- SALES UP, PROFITS DOWN Sales of manufacturing companies rose 2% to to a record \$250.2 billion in 1952. But profits before taxes fell 16% and profits after taxes dropped 10% from the levels of 1951. In making public the figures, the Securities and Exchange Commission revealed that only five of twenty-three industrial groups showed gains for 1952 in profits after taxes: apparel and finished textiles, electrical machinery, leather, transportation equipment other than automobiles, and motor vehicles and parts.
- STEEL INDUSTRY PASSES GOAL N.P.A. officials recently told members of the Steel Industry Advisory Committee that the mid-1953 expansion goal to 118 million tons capacity has already been passed. They said it appears that the 1954 capacity goal of 120 million tons will be reached.
- TROUBLED WATERS IN OIL Both sides of the argument on whether or not to restrict oil imports into U.S. have been given vehement voice in the past few weeks before Congressional committees considering extensions of the Reciprocal Trade Agreements and in public statements. Indication of what the Administration stand is appeared in the statement by Interior Secretary McKay that restricting oil imports "could have a very serious effect on our economy."
- PRICE CHANGES IN METALS Albert P. Koenig, president of Cerro de

 Pasco Corp., had this forecast recently: present low prices
 of zinc will not stay that way, and present "overstocked"
 position will be corrected; copper prices will probably fall.

Cooperation + Competition = Opportunity

By Roger E. Gay, President, The Bristol Brass Corporation, Bristol, Conn.

Abstract of an address at a joint meeting of the Purchasing Agents and Production Control Managers Associations, Dayton, Ohio, March 12, 1953.

PRIOR to coming to this meeting, I had a chance to talk with some of our Bristol Brass people in our Dayton warehouse. I buttonholed one veteran of many years of factory experience — a rather forthright chap — and I asked him:

"Fred, just what should be the relationship between the Purchasing Agent and the fellow who heads up Production Control?"

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"Mr. Gay," he said, as he took his pipe out of his mouth, "they're just like cousins. They should be so close to each other that they can sip out of the same beer g'ass."

Now, I don't know what the Board of Health would think of that situation, but the old-timer's ideas set me to thinking.

Breaking the Barriers

Industry, which is essentially the field of engineering, has had a recent history very much like that of science. You will recall that among the basic sciences—physics, chemistry, botany, zoology, astronomy, and all the rest — there used to be rigid barriers. Each science used to be effective y sealed off from the other as if by reinforced concrete.

Then, as science and technology became more complicated, the barriers began to crack. Exchange of ideas filtered across from physics into astronomy until we had astrophysicists. The geologists began to swap knowledge with the biologists and the chemists. I know of one fellow at Yale who holds the formidable title of Professor of Bio-Geo-Chemistry.

You and I can recall similar instances in industry. I know of one company which only a few years ago had a situation where the Sales Department was not talking to Order Scheduling nor to Production Control. In another case, the In-

dustrial Engineering people would not have very much to do with Personnel. We all know how Research and Development people often work in an area which is either physically or psychologically blocked off from everyone else — and yet the work going on in these labs will determine whether or not all of us will be in business tomorrow.

Fortunately, we can say that most managements in America have smashed or are trying to break down any artificial barriers which separate one factory department from another. There will always be personality clashes, of course, just as long as people behave like human beings. But at least we can all see a conscious effort to make information available promptly and completely. This can be done through management meetings, informal exchange of the latest data by phone or memo, and - just as important by meetings such as this.

We recognize that every department in the modern manufacturing plant is interrelated and interdependent. Without a sales forecast, production control cannot schedule parts, components and complete assemblies. And without knowing the needs as spelled out by production control, the Purchasing Agent would be groping in the dark. Just as the various departments within a plant must depend on each other for smooth, efficient operation, so must your plant and mine - and every manufacturing unit in this country - depend on the economic health of our economy.

New Era of Competition

Let's look at the economic picture in the days ahead. There are many imponderables and many big question marks. Some of them we can take into account in our thinking. Others, such as the effect on the free world of the death of Stalin, cannot now be measured accurately by the economists and the experts. We do know that the output of American business has advanced

almost steadily since World War II, even in the face of persistent reports of an impending collapse.

Theoretically our gross national product could reach a figure of 425 billion dollars by 1960, with several ifs: If there is relief of tax burdens on individuals and corporation, increased investment in production facilities, greater encouragement of foreign trade, and cooperation by everyone to bring price and wage levels in line with the need for full employment and the stability of our economy.

I think we can be optimistic about the situation facing us now.

Many economists feel that the rise in production seems to be outrunning the increase in sales. Does this mean we are facing a "mild but pro-longed readjustment?" Or a swift decline? Or neither? But there are certain things we do know and should take advantage of, even now. We know that the life of any business - and its size - depends on whether or not customers continue to vote confidence in that firm by purchases. We know there is a high level of income in the nation, and whether or not consumers spend it depends on selling techniques which are used.

In other words, we are re-entering the good old days of competition and hard selling.

Meeting the Challenge

So this same challenge faces all of us — you, the purchasing agents and production control men, and me, the salesman for a brass company.

With the revival of the oldfashioned competition and economy, it is up to business to prove by sales ability and manufacturing knowhow that they can measure up to the situation.

The production control people will have to do even better planning in order to keep a watchful eye on inventories and still take care of customer needs. The production control man will be in a strategic position to control many cost items, and to keep our customers happy by meeting production schedules.

The Purchasing Agent will have a buying job he has not encountered in some time. As a matter of fact, he has been more like a salesman in dealing with suppliers, particularly of critically short items. He has to buy wisely and well, to discriminate between the apparent and the real, between expediency and good buying procedures. Purchasing and production control are cousins, as I said earlier, since the beer glass from which they sip is the well-being of their company. Purchasing has to have the right material in the plant at the right time for production control to use.

In an economy such as ours and at a time like this, there is only one approach to meeting competition: We must reduce costs and improve quality. We can reduce costs by more efficient manufacturing methods, cutting down on scrap and cutting the fat out of overhead. We can improve our quality through better engineering and manufacturing techniques. And by one other very important factor, by enlisting the support of our men and women on the production line.

We all know of several industries where the same type of material is manufactured for approximately the same price. And yet one company has a splendid reputation for the quality of its merchandise and the other does not. It may be attributed to several reasons but the primary one is probably that the successful company takes pride in quality. If the company takes this positive stand and instills this attitude in its employees, then human relations enters the picture and we have to look at people as well as things.

We've been hearing a great deal about the importance of communications in industry and the necessity of better personnel practices. I don't know what your experience is with your company, but there is one thing I can tell you about our company. We are trying to build better quality with the aid of good communications and we think it works. Because people are the most important aspects of our manufacturing life, and I make no exceptions here, there are certain things I believe we should do to mobilize their enthusiasm and positive help.

One of the first goals we should strive to reach is that of providing proper recognition to the people in

our organizations. You as supervisors and department heads know that often a complimentary remark will do wonders for the morale and incentive of the people under your direction. I think we should on a regular basis tell our people how they're doing and at the same time point out how they can improve themselves and help their company.

Again, we in industry have the responsibility of showing our people, in a way they can understand, the importance and relationship of their jobs, no matter how routine, to the finished product, to the growth of the company, to the entire community. We can underline the importance of people in our company by rewarding meritorious performance on the job by deserved promotions and pay increases.

Most important of all, we can make the wisest use of people in our company and capitalize on the vast and untapped resources of human energy which are always present. If we can once get across to our people the firm idea that quality helps sales and sales mean more job security for each one of them, then we are under way. We have made a start on that in my company—and I know it is being used successfully in a great many more.

It is good business, it is profitable business, to have good people enlist willingly on your side. So with one eye on costs and quality, and the other watchful to mobilize our human resources, we should be in an excellent position to meet any challenges which 1953 has to offer.

Bigger Opportunities Ahead

Production control men and purchasing agents are accustomed to rapid turn-abouts as production requirements change, materials are in long or short supply and customer requirements vary from day to day. That is the great challenge to both of you at the moment as we stand on the threshold of new technical developments.

We all know about automatic equipment in our industrial plants and the only ceiling on this development seems to be the question: "How automatic can you get?" Electric motors and electric tubes are at the heart of this automatic revolution. But now another device is coming along, the transistor, which threatens to replace the vacuum tubes with a minute gadget occupying an area almost invisible to the naked eye.

There are some other develop-



"Pardon my nervousness, Mr. Bly-my son is going to try to land your account today."

mental and engineering signposts which it would be well for us to watch, since technological change sweeps through all industry with unusual speed and unforeseen results.

An increasing proportion of our raw materials are mechanically made or synthetically derived.

The demands for more production, more machinery, more plant space are reflected directly in the requirement for more electricity, coal, oil and natural gas. In addition, our plants must be more modern, productive, automatic than what we have now.

Machine tools which have been brought out since 1947, for example, are 40% more productive per machine, on the average, than pre-war machines.

These typical industrial achievements point up that regardless of the business forecasts for 1953—or even 1954—we face our greatest opportunities for achievement as purchasing agents and production control people and salesmen in the dynamic nature of the American economy.

Not a day passes but what new methods and machinery are being introduced into our factories from one end of the nation to the other. Not a day passes but someone has developed a new material unheard of a decade ago. It seems that developments like orlon and nylon and transistors and even television were unheard of the day before yesterday.

This is the hope and promise of the future. By improving our quality, our production methods and working with our people on the production line, by cutting our costs and meeting and beating competition, we can bring to reality all the dreams of all America.

Multi-Purpose Conversion Chart

By Louis J. Murphy, M.E.

ERE'S a multi-purpose conversion chart that can save you a lot of time and detailed calculations when you have to deal with a problem involving two different systems of weights and measures, such as the metric system and our conventional American units.

It consists of two parallel scales connected by a diagonal line, on which reference points are indicated. Each reference point represents a pair of comparable units, e.g., meters-yards, kilometersmiles, pounds-kilograms, etc. Units listed to the left of the diagonal line refer to the left hand scale: those on the right refer to the right hand scale. You enter the chart from either side, whichever quantity is the known quantity, lay a ruler across the chart through the appropriate reference point, and get a direct reading in terms of the corresponding unit where straight-edge intersects the other scale.

Example: You must place an order for 60 lbs. of a material that is produced in a country using the metric system. How many kilograms are equivalent to 60 lbs.?

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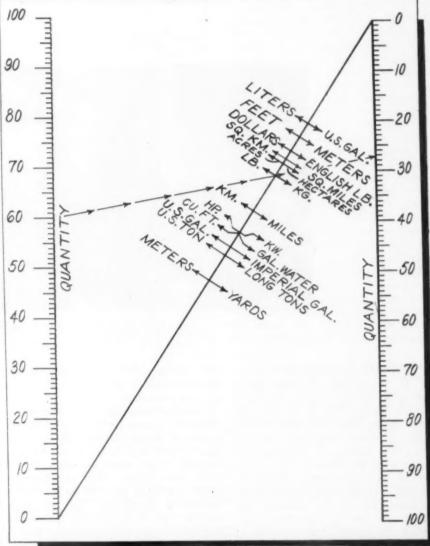
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Solution: Enter the chart on the left, at a quantity of 60 lbs., and draw a straight line through the point marked "lb.-kg." on the diagonal scale. At the intersection of the straight line with the right hand vertical scale, read the equivalent as 27.2 kg.

Since the vertical scales are graduated from zero to 100, they can be used for any quantity by simply moving the decimal point before entering the chart—and remembering to adjust the decimal point similarly in the result. For instance, if the quantity in the above problem were 600,000 lbs. instead of 60, just move the decimal point four places to the left and solve as before. Then move the decimal the same number of places in the result (but in the opposite direction, to compensate for the first



adjustment) to arrive at the answer of 272,400 kg.

The chart is not restricted to metric conversions, but to any problem involving fixed ratios, such as horsepower-kilowatts, cubic feetgallons, tons-long tons, and the like, as shown. Results are sufficiently accurate for normal on-the-job calculations. In cases where greater accuracy is required, the chart pro-

vides a useful quick check on longhand or machine calculations, and helps to spot errors from using wrong conversion factors.

One warning: The conversion from dollars to pounds sterling is based on the current exchange rate of \$2.80. This is not a permanently fixed ratio, and if the exchange rate should be changed, the chart would have to be revised accordingly.

Navy Purchasing Officers Confer at Washington



Rear Admiral Murrey L. Royar, Chief of the Navy Bureau of Supplies and Accounts, with some of the ranking procurement officers at the Purchase Conference.

R EPRESENTATIVES from most of the Navy's 46 major purchasing activities within the continental United States, as well as from London and Pearl Harbor, attended a recent three-day conference of the Bureau of Supplies and Accounts in Washington, for a review of field purchasing activities. In addition to reports from key Navy personnel, six of the nation's top civilian purchasing executives addressed the conference, presenting progressive industrial thinking on the problems of procurement.

Rear Admiral M. L. Royar, Chief of BUSA, opened the meetings, pointing out that the primary objective was the interchange of best ideas and methods between field personnel, plus the benefit of techniques and experience of purchasing agents from private industry.

The keynote address was delivered by Rear Admiral F. L. Hetter, Assistant Chief of BUSA for Supply Management. He emphasized the great need for teamwork between

the various phases of supply, such as stock control, technical, and purchasing personnel.

Captain Lamar Lee, Jr., Director of the Purchase Division of BUSA, spoke on "Small Purchases", stressing the fact that "most of our daily troubles stem from the high priority, low dollar value purchases, which seems to be with us in ever increasing numbers." He pointed out the area of vast savings that are possible in the field of small purchases by the proper use of cash procedures and intelligent analysis of the use of specifications, inspection, and packaging.

"Purchasing for the Navy Supply System" was viewed alongside "Purchasing and Inventory Control in Industry", by Commander H. H. Blackman of the Aviation Supply Office, Philadelphia, and A. M. Kennedy, Acting General Manager of Purchases, Westinghouse Electric Corporation. Commander Blackman warned against the dangers of buying more service such as packaging,

etc., than today's needs require, showing the possibilities of shortening lead time by citing a number of examples where the seemingly unbelievable has been accomplished along this line. Mr. Kennedy spoke on the extremely close liaison that is necessary between inventory managers and purchasing personnel. He advised the conferees to apply creative thought to this subject, as "there is no other single field of operations that can make you look like more of a hero or more of a bum."

The area of training of purchasing personnel was covered in parallel addresses by Commander J. M. Malloy of the Navy Purchasing Office, Los Angeles, and George W. Aljian, Director of Purchasing and Packaging, California and Hawaiian Sugar Refining Corporation. Commander Malloy outlined the leadership that is required and the emphasis to be given training by department heads in order to make an on-the-job training program worth



Captain Lamar Lee, Jr., Director of the Purchase Division, BUSA, with John W. O'Donnell (left), formerly Purchasing Agent for the United Fruit Company now serving as special consultant to Captain Lee. and Harvey Hopkins (right), Vice President—Purchasing, American Can Company, who addressed the conference on "Purchasing and Traffic Management".

while. Mr. Aljian stressed the importance of setting and seeking high standards, even though the standard may rarely be completely attained, and commented on the value of technical background and training as a preparation for purchasing.

Captain M. R. Williams, Assistant Chief and Director of the Field Services Division. Office of Naval Material, outlined the vast services available through the Material Inspection Service in the purchasing operation, while Lieutenant R. C. Thompson discussed the functions of a Supply Corps officer in a Material Inspection Office. "The Role of the Cost Analyst in Navy Purchasing" was the subject of an address by Royal Kiser, head of the Contract Lipison and Audit Review Branch of Cost Inspection Service, BUSA.

An address of special interest was presented by Lieutenant Commander D. F. Kent, Officer in Charge, Navy Purchasing Office, London, England. He traced the growth of the London operation and discussed the peculiarities encountered in offshore procurement on the continent of Europe.

A vast reservoir of savings is available through standardization, declared Thomas D. Jolly, Vice President, Purchasing and Engineering, Aluminum Company of America. Mr. Jolly, who is a past president of the American Standards Association, traced the struggle toward standardization within his own company, the Navy, and the nation.

Captain W. McK. Landau of the Navy Purchasing Office, New York, told of the Contract Review Board as developed in his district. This Board acts as a check-and-balance body through which certain procurements are screened prior to making an award. This screening keeps management apprised of the procurement picture at all times and "combines into each decision, the experience and judgment of all the members." In Captain Landau's opinion, "the contract review board, if emoloyed judiciously, constitutes one of management's most effective tools in a Navy Purchasing Office, and has been the means of saving considerable sums of money."

"Purchasing and Traffic Management in Industry" was the tonic of Harvey Hopkins, Vice President—Purchasing, American Can Company. Mr. Hopkins discussed transportation as a factor in determining the ultimate cost of material, as we'll as a factor in meeting required delivery schedules. Its importance is recognized in his company in that the Traffic Division has a prominent part in determining the location of new plants.

Much of the "necessary evil" of outside expediting can be avoided by having a knowledge of the performance of suppliers in meeting their responsibility for delivery at the time indicated. Such knowledge should be utilized in the selection of a proper supplier, and expediting should be done in the purchasing department, as a means of helping the buyer in performing his obligation of buying "the right quality, in the right quantity, at the right time, for the right price." This was the philosophy expressed by Vincent deP. Goubeau, Vice President and Director of Material, RCA Victor Division, Radio Corporation of America.

Concluding guest speaker at the conference was George A. Renard, Executive Secretary, National Association of Purchasing Agents. Mr. Renard observed that one of the most significant recent changes is management's recognition that "a strong management organization can be built better around purchasing than around any other division in the organization." As a result of economic conditions at work during recent years, he continued, "we find that older buyers are going to have to relearn the meaning of competition in negotiation, as it is only possible to secure a fair price through the competition of representative suppliers." He noted that today's purchasing executive goes beyond price in his search for value; that a buyer can negotiate for best value only "if he fully understands the need, the end use value of products and processes that will meet the requirement adequately."

Other speakers from the Purchase Division of BUSA included Commander O. W. Stafford, on organization; H. L. Brewer, contract specialist; and Lieutenant E. E. Mc-Morries, on the new BUSA purchase manual.

Purchasing officers from the Navy's far-flung supply service brought their problems, experience, and suggestions to the conference, and shared in the counsel of leading purchasing executives from private industry.

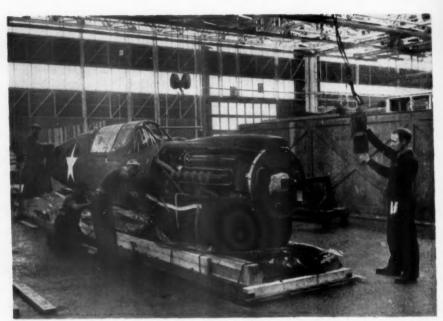


Practical Pointers on Package Purchasing

By T. A. Dickinson

PACKAGES and packaging materials for the products of manufacturing industry represent one of the most important types of purchases that the industrial buyer is called upon to make for his company. In addition to the basic purpose of protecting the merchandise against the hazards of transit and handling. to insure its delivery to destination in good condition, packaging largely determines the ease with which a product can be handled and stored, and frequently influences customers in their selection of competitive merchandise. These distribution and merchandising features assume new and major importance in the present highly competitive era.

It is not surprising to find that package purchasing is quite generally recognized as a responsibility that merits highly specialized attention in virtually all sizable organizations, and that competent purchasing personnel has been recruited and trained for this task. Or that the National Association of Purchasing Agents has for many years maintained an active national committee to deal with these items, and has regularly devoted special ses-



The term "packaging" in this instance denotes skid mounting for easy handling by sling and crane, inclusion of accessories needed for final assembly as part of the unit package, and a covering of plastic film to protect against corrosion damage.

sions at its annual conventions to the consideration of packaging matters. Or that the packaging division of the War Production Board and the package specifying and procurement for the special requirements of the armed services during World War II were placed under the direction of experienced packaging-purchasing men from industry.

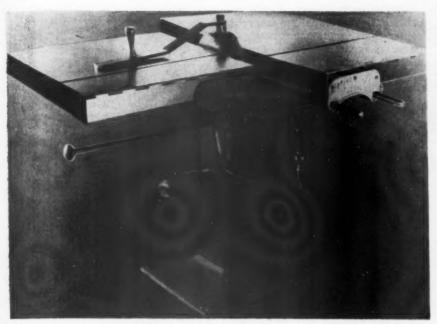
Packaging materials embrace a wide range, including metal, wood, plywood, paperboard of various constructions, fibreboard, textiles, glass, and plastic films, to name some of the major categories, selected according to the product to be packaged and the normal hazards that may be encountered. Furthermore, there is a similarly wide range in methods of construction and fastening, so that it is possible literally to "tailor" the package to the conditions of use.

The fundamental requirements for a good package have been summarized by Duncan Hinde, Purchasing Agent for American Machinery Products, as follows:

Basic Requirements

1. It should facilitate the handling of a product—by factory workers and shipping personnel as well as by wholesale and retail customers.

This consideration goes beyond the package itself to the way in which it is to be handled by the consignee. It involves, for example, the question of palletized shipments or other devices in which mechanical handling equipment is used. A further implication is the handling of accessories necessary to the delivered product. For example, many manufacturers of products that have to be assembled in part at point of



This press is representative of the many specialized tools that facilitate production packaging work. It is used to compress upholstery springs for shipment in compact containers, replacing the bulky packages formerly required.

delivery foliow the practice of using boxes or bags for small parts, bolts and screws, etc., that can be enclosed in the larger container to minimize losses and assure a complete unit delivery of all elements required to put the product in working condition.

2. It should be relatively simple and compact—not only to facilitate handling, but to minimize the cost of packaging materials and the expenditures required to convey a packaged product to a consumer.

Shipping volume is an important factor, directly related to costs in marine shipments, and indirectly at least in making maximum use of carload or truckload quantities, and in coming within the dimensional requirements of parcel post regulations, etc. It has an important bearing on stockroom storage problems. too. One especially interesting aspect of this consideration is reported by the purchasing agent of the Mission Furniture Corporation, who was recently able to get a 10% reduction in the normal cost of upholstery springs he purchased, thanks to a suggestion which enabled his supplier to lower his packaging and shipping costs by compressing the springs for shipment in packages of comparatively light weight and in a greatly reduced amount of space.

3. It should be durable enough to resist the forces that would ord-inarily tend to damage a product before it reaches the final customer.

The word "ordinarily" is pur-

posely used to qualify this statement because in good business practice it is usually better to anticipate a certain amount of damage due to extraordinary circumstances than to pay the additional cost of packaging designed to make the shipment completely "damage-proof" under any contingency.

This is, first, a matter of intelligently weighing and balancing the costs involved, and secondly, to achieve this end, it is a matter of recognizing the particular hazards most likely to be encountered and designing the package to meet these hazards. For example, in preparing bulky and expensive aircraft equipment for overseas shipment, it is customary to provide "protective packaging" in the form of thin plastic film materials, sealed to prevent the corrosive action of salt water atmosphere, which is the most likely source of damage in transit. On the other hand, the manufacturers of inexpensive but fragile electric light bulbs, use comparatively expensive cardboard sleeves and cartons, regardless of how far their product may be shipped, because mechanical forces are the most likely cause of

4. It should prominently display the name of the manufacturer and, if appropriate and possible, the trade name of the product.

This has a dual purpose. It is an inexpensive form of advertising, even when the name is imprinted on a rough carton or crate. Further, it is a means of identification that

has frequently prevented losses of merchandise when shipping labels were lost or damaged.

5. In addition to the utilitarian or functional design of the package, it should be as neat and attractive as possible.

This suggestion is made not only for the sake of the customer, but because it definitely tends to reduce the possibility of damage due to careless handling. Even the most disinterested postal clerk or freight handler is inclined to respect the package that looks good.

6. In all cases where the shipping package is likely to be displayed at point of final sale, and particularly where ultimate sales are dependent on the reactions of retail customers, it should effectively indicate the uses and merits of the product.

This point is a significant one since it frequently determines the extent to which preceding factors should be considered under given circumstances. Often, it indicates the use of two packages-or a package within a package-for the shipment and sale of a single product. This has, of course, become standard practice in most consumer items sold at retail, and it has many applications in regard to industrial products as well. The two types of packages can, for the sake of convenience, be classified as "protective" and "display" types, since the purpose of the one is to assure delivery of a product without damage, while the purpose of the other is to exhibit the delivered product in the best possible manner, with a secondary function of convenience and protection in the less hazardous retail handling.

Protective Packaging

In many respects, the effectiveness and value of protective packaging are empirical and can be determined or predicted only on the basis of experience, since 100% protection, as previously noted, is rarely practical. However, one point on which most package purchasers will agree without argument is that protective packaging—as indicated by the very term—should reduce product damage to the lowest possible level, regardless of whether such damage or shipping losses are covered and compensated by insurance.

For instance, in one western manufacturing company that had been collecting more than \$25,000 a year on insurance claims for shipping damages, the purchasing agent made it his business to find out whether it might not be wise to spend an extra \$10,000 a year for better pro-

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tective packages. He eventually reported the following results of his study of the economic aspects of the situation.

a. While the sums collected on insurance claims approximately covered the actual value of the damaged products, the company was spending at least \$5 000 a year for insurance coverage that should not have been necessary.

b. Clerical costs in filing claims and resultant delays in making collections were costing the company substantial sums. At a very conservative estimate, this factor represented at least \$1,500 a year of avoidable expenditure.

c. The company was losing an estimated \$20 000 worth of business per year due to its failures in making prompt and consistent deliveries in acceptable condition to its customers. The loss of important good will was incalculable.

Thus, on an objective economic basis, he was justified in recommending additional expenditures for better protective packaging.

It should be noted, however, that material costs alone do not invariably denote the protective value of a package. Innumerable examples could be cited where expert package redesign has resulted in important savings in initial cost and in shipping weight, with equivalent or superior protection.

Results of Experiment

Further, the physical factors of protection are not the only ones to be considered. An interesting experiment was recently conducted by American Ceramics Company in an effort to determine the effect of neat, attractive packaging in minimizing shipping losses due to the breakage of ceramic artware. The product is a fragile one. Using rugged wooden boxes, with careful inside packing, nevertheless 50 of every 1,000 shipments resulted in damage reports. The experiment consisted of making 1,000 test shipments in corrugated containers, which had lower physical properties but were designed as attractively as possible and indicating the nature of the contents. When the results were tabulated, company officials were astounded to learn that the shipments made in the less expensive and lower-test packages reached their destinations and brought only 15 reports of damage, presumably due in large measure to more careful handling.

Display packaging is a highly specialized field, related to marketing rather than to the more utilitarian purposes generally considered in package purchasing. Many products are sold without a preliminary display of each and every unit, and, also, many products can be effectively exhibited without special packaging. Yet the field of display packaging is of very wide application, and it is of major importance because display packaging can be the difference between the success or failure of a product. This is especially true:

Display Packaging

1. If the product is new and so unfamiliar to the average customer that it cannot be sold without a display to indicate its usefulness and advantages.

2. If the product is of such a nature that its appearance must equal or exceed that of competitive products in order to attract a reasonable number of customers.

3. If packaging is essential to the "shelf life" of a product, as in retaining a fresh appearance if the product on display is susceptible to handling, is exposed to strong sunlight in store windows, etc. In this respect, display packages are also protective, although this may be secondary to appearance and though the hazards are less rugged.

"Maybe it's true that the world will beat a path to your door when you build a better mousetrap," says P. A. Andrew Johnson of California Industries, "but our experience has indicated that you had better use good display packaging to show why a mousetrap is superior if you want the public to take notice and react by buying it. You see, we actually did build a better mousetrap not long ago, and it retailed for less money than most of the inferior traps. Yet we weren't able to amortize our basic tooling costs until we finally developed a package that would convince the average housewife that our product was really better. Incidentally, the new type of packaging added considerably to unit cost, in fact it forced us to increase our prices to a point where they were higher than those of competitive products. However, that actually turned out to be a matter of good sales psychology, for it seems that most retail customers are inclined to assume that better quality is proportionate to higher price."

When the merits of a product are well known and are more or less comparable to the qualities of com-



The complete package serves many purposes. It carries, protects, displays, and sells the product it contains.

petitive merchandise, there is less need for packaging that presents a "sales talk." Yet the display package should nevertheless be consonant with the quality of a product and tell its silent story of quality to the prospective customer. That's why manufacturers in the luxury fields, such as jewelry and cosmetics, for example, frequently spend more for display packaging than for the production of the merchandise displayed therewith, and have found it to be a profitable merchandising practice. An attractive satin-lined box can sell inferior merchandise in quantity, while better products at lower prices acquire nothing more than a thick layer of dust.

The importance of packagingboth protective and display-is so generally acknowledged today that competent procurement of these materials has become a No. 1 responsibility in the purchasing departments of almost all manufacturing companies, and the buyers assigned to this responsibility have acquired an impressive degree of know-how and experience in this field. One of the marks of competence is the ability to recognize the possibilities of constant improvement. In addition to their own resourcefulness and experience, packaging buyers have access to the extremely valuable services of package engineers in the organizations of their container suppliers. While many of the practical packaging applications are being evolved by the purchasing agents themselves, this source of help should not be underestimated or ignored. In packaging, as in other product fields, cooperation between the buyer and the supplier usually develops the best and most economical answers to the problems that must be met.

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AVOID LOSING LAW SUITS

By Leo T. Parker

enerally speaking, purchasers have at their disposal good lawyers. However, even so, what can the most experienced lawyer do to win a suit if the purchaser already has lost the suit by illconsidered actions? Legal statistics positively prove that the only dependable rule and plan by which lawyers may consistently win law suits is: The purchaser must conduct business in such a manner as to prepare to win unavoidable suits. This rule may be carried out practically only by persons who keep well informed of the cause and outcome of new and modern higher court decisions involving other pur-

The writer has collected several higher court decisions which clearly illustrate why purchasers may lose law suits, and also what they may have done to assist their lawyers to win the suits. Furthermore, my answers and explanations herein are fully verified by higher court decisions, which can be used advantageously by readers and their lawyers to win unavoidable law suits.

Don't Delay Complaint

A common cause of purchasers' legal difficulties, and 'subsequent unfavorable verdicts, results from failure of the purchaser to promptly notify the seller that the subject of the sale is unsatisfactory or otherwise unacceptable.

For example, in 224 Pac. (2d) 940, the testimony showed these facts: A buyer in Denver, Colorado, signed a written order with a seller for "one carload Toilet Tissue (650 cases) \$9.90 per case". In the space on the order blank following the printed statement "Requested Delivery Date", the word "Rush" was

typed by the salesman. This order was signed by the buyer on April 10. The bill of lading showed shipment of the paper on April 29. The shipment did not arrive in Denver until May 20. The buyer accepted delivery of the paper, but was dissatisfied with it, claiming that the quality was not as promised by the seller's salesman. Also, during the subsequent trial, the buyer testified that the seller's salesman had promised "Immediate" delivery, but that the paper was not delivered until 6

should have immediately complained to the seller that the quality of the paper was not as guaranteed, or he should have refused to accept the shipment due to its delayed delivery. Then he may have won the suit.

Do Not Use Defective Merchandise

The higher courts hold that if a purchaser continues to use an alleged unsatisfactory or defective appliance, he must pay the seller the



A COMPLETE CONTRACT MAY BE RESCINDED FOR FAULT OF ANY
PART, PROVIDED THE BUYER INSISTS PROMPTLY

weeks after the order was signed.

As the testimony showed that the buyer had kept the paper for 90 days without making a complaint to the seller, the court held:

"Defendant (buyer) had the burden of proof of establishing the fact that notice of the broken promise or breach of warranty was given to plaintiff (seller) within a reasonable time after it knew, or should have known, that the performance of plaintiff was objectionable."

Quite obviously, this purchaser

agreed price, although actually the appliance is defective.

For example, in 48 So. (2d) 638, it was shown that the plaintiff company is a dealer in refrigeration equipment, and engaged in the repair and service of such equipment. On June 25, it delivered to one Smith, a "deep freeze" box and unit for use by him in a restaurant. The price was \$1,257.45, divided into a down payment of \$360.45 and a credit payment of the remainder. Smith executed and delivered or-

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dinary promissory notes to the seller for \$260 00 balance due, and two months thereafter signed a conditional sale contract for the balance of the purchase price payable in fifteen consecutive monthly installments. This contract provided that the purchaser acknowledged delivery and acceptance of the unit, in good order.

After several months had expired, Smith refused to make agreed payments and notified the seller that the deep freeze unit was unsatisfactory and defective. The higher court ordered Smith to pay the balance due, and said:

"The continued use of this refrigeration equipment by appellee (Smith) after discovery of its alleged unsuitable and unsatisfactory condition, in the absence of notice of rejection and return or offer to return it to appellant constituted an acceptance thereof on the part of the appellee (Smith)."

Purchaser Must Prove Case

According to a late higher court decision, one who purchases alleged defective equipment or merchandise, must prove first, that the merchandise was not equal to the seller's implied or expressed warranty, and second, that he offered to return the merchandise to the seller within a reasonable period of time

chase price. The purchaser alleged that the appliance was defective and as a result the coil became so heavily frosted and covered with ice that it necessitated defrosting three times per week.

Since the purchaser failed to prove these all egations by disinterested witnesses, the higher court held the seller not liable to the purchaser, who must keep the refrigerator.

Defects Are Waived

A great deal of discussion has arisen in the recent past over the answer to this question: "If a part of the subject of a sale does not meet the requirements of a guarantee, what is the purchaser's remedy?" This question has arisen more often in the recent past particularly, because so many multiple subjects of sale have been sold, and because of the scarcity of certain items. The situation may arise in the sale of heavy equipment, housing, and the like. In this respect the law is established that if the buyer fails to promptly complain to the seller, and immediately demand fulfillment of the guarantee or other obligation, he automatically loses his right to rescind the whole contract, and may not even have one item substituted.



THERE IS AN IMPLIED WARRANTY THAT EQUIPMENT SHALL BE REASONABLY FIT FOR INTENDED PURPOSE

after he discovered the defect. Otherwise he cannot recover damages from the seller.

For example, in 46 So. (2d) 640, it was shown that a purchaser purchased from a seller an electrical refrigerator. After using the refrigerator several months the purchaser sued the seller and asked the court to award him damages, and compel the seller to take back the refrigerator and refund the pur-

See the late and leading case of 75 Atl. (2d) 705. In this case the testimony showed that a man purchased a home. In the contract there was a clause that the seller would install in the kitchen a Westinghouse range. The seller did not install this make range, and when the buyer took possession of the home he knew that another make range had been substituted by the seller. However, the buyer failed

and neglected at this time to enter a complaint with the seller. Later, after considerable delay, the buyer contended that the seller had breached the original contract to install a Westinghouse range and that for this reason the seller should pay reasonable damages, and further that he the purchaser had a legal right to rescind the complete contract.

This higher court laid down important law to the effect that as the buyer had failed to immediately register a complaint with the seller, the buyer thereby was guilty of negligence for which he was responsible to the extent that he forfeited his usual right to rescind the whole contract, and further the seller was not required to supply the originally specified Westinghouse range.

Actually, if the purchaser had directed the seller's attention to the fact that a range different from the one specified in the contract had been installed in the home, and the seller would have refused to supply the Westinghouse range, the buyer then could have rescinded his complete contract and refused, without any liability, to accept and pay for the purchased home.

the purchased home.

For comparison, see 77 Atl. (2d) 769. Here a purchaser accepted an appliance without any complaint at this time, that it was not satisfactory. The purchaser delayed several months before registering his complaint that he was dissatisfied. The higher court held that the seller could not be liable to the purchaser and the latter must pay the full contract price.

Fault of Purchaser

Modern higher courts consistently hold that a seller always "impliedly" guarantees that merchandise is reasonably free from defects, and also, reasonably worth the purchaser delays an unreasonable period of time in returning defective merchandise to the seller, or the testimony indicates that failure of the merchandise or appliance to be satisfactory to the purchaser resulted from the purchaser's negligence, the latter must pay the full contract price to the salesman.

For instance, in 230 Pac. (2d) 278, the testimony showed these facts: One Stinch purchased an electrical pump on the 27th day of March for use in irrigating his trees and shrubbery. He installed the pump and then wrote a letter to the seller, stating that the pump operated sat-



isfactorily, and requested him to send a bill. Two months later he again started to operate the pump. It ran about fifteen minutes and then suddenly stopped. He then took the pump to an electrician for repair. Stinch then notified the seller that the coil in the motor had burned out, and he could not use the pump. Two months later, or four months after acceptance of delivery, the seller demanded pay-

chaser's suit had two fatal defects. First, he delayed four months in returning the equipment to the seller, and second, the evidence convinced the court that the motor burned out as a result of the purchaser's own negligence. Either of these defects was sufficient to effect an unfavorable verdict for the purchaser.

Generally speaking, the courts hold that all sellers impliedly warto the end of the line. The field man examined the land and recommended the use of ten-inch concrete pipe, informing Knowles that his company would not guarantee the pipe line unless it installed the same. Knowles agreed, and ordered the pipe installed by the seller. After further discussion, it was agreed that Knowles would dig the ditch for the installation of the pipe. Knowles did this job and the pipe company laid the pipe. After the job was completed, Knowles started the pump and the pipe leaked at many joints. The field man sent men to fix the line, but whenever the water was turned on, leaks would appear at the joints of the concrete pipe and were sometimes so violent as to create holes of considerable size in the soil. Knowles testified that two thirds of his crop was lost due to lack of water.

The higher court held the pipe company liable in damages to Knowles, saying:

"The evidence discloses, beyond question, that respondent knew what appellant (Knowles) wanted, and undertook to install a pipe line that would answer the purposes. From the evidence, it appears that the pipe line never did satisfactorily or even reasonably accomplish the purpose for which appellant (Knowles) ordered its installation. ... It is a generally recognized rule of law that an implied warranty of fitness of goods for a particular purpose, known to the vendor, arises when the purchaser, who is not informed as to the best article to accomplish his purpose, relies upon the advice of the seller. . . It appears that appellant (Knowles) suffered damage as the result of the defective operation of the pipe line."

This court explained that manufacturers and sellers may avoid all liability on implied guarantees by inserting in the contract a clause which reads: "There is no implied or other guarantee on the subject of this sale. This contract contains all obligations assumed by the seller, and all verbal statements, guarantees and promises not included in this contract are hereby cancelled."

YOU HAD NO LICENSE TO SELL ME THAT MACHINE YOUR OPERATOR DIDN'T FOLLOW OUR INSTRUCTIONS TSK! TSK!

MANY LAW SUITS ARE LOST BECAUSE COMPLAINANT BASES HIS ACTION ON THE WRONG POINT OF LAW

ment of Stinch. Upon refusal, the seller filed suit against Stinch to recover the full purchase price.

Stinch argued that there was an "implied" guarantee by the seller that the pump and its motor were reasonably free of defects and, for this reason, he need not pay the contract price. The court agreed with this contention, but pointed out that Stinch was not diligent in returning the pump to the seller, having kept it four months before returning it to the seller. The higher court held that in view of this testimony, Stinch must pay the full contract price for the pump.

Also, this court held that since considerable testimony was to the effect that Stinch had allowed the electric motor to get wet, which may have caused the coil to burn out, Stinch must pay for the pump, irrespective of his failure to promptly return it to the seller. The court said:

"When the pump was first installed it operated satisfactorily. The pump and motor were left uncovered and unprotected. The coil in the motor would likely become saturated with water and remain wet. The starting of the motor while the coil is wet will cause it to burn up."

Hence, in this case, the pur-

rant "reasonable value" of the subject of a sale. This is so although the seller makes no statement regarding the quality of the merchandise, and further the purchaser is not sufficiently experienced to discover defects by his ordinary inspection. Of course, if the purchaser is an experienced buyer and inspects the merchandise, the courts conclude that the circumstances may relieve the seller from the usual responsibilities of an implied guarantee. Otherwise, a guarantee will be implied by the court. Such implication not only is applicable with respect to the quality of the merchandise, but also in all other normal respects.

For illustration, in 219 Pac. (2d) 557, the testimony showed: One Knowles purchased a large farm which was then irrigated by water taken from a canal. The first season being extremely dry, Knowles decided to procure additional water for irrigation purposes by pumping water from a river and he consulted the "field man" of a concrete pipe company. Knowles explained that he wanted a pipe line that would carry fifteen hundred gallons of water per minute, under pressure from the river to the edge of his farm and, from that point, one thousand gallons per minute

License Not Implied

Considerable discussion has arisen from time to time over the legal question: "Does a seller impliedly guarantee that he will comply with



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laws of the state in which the purchaser is located?"

According to a late higher court decision, the answer is No. Also, this court held that if a purchaser fails to properly operate purchased equipment, he must pay the contract price, although he is dissatisfied with its performance.

For instance, in 210 Pac. (2d) 65, the testimony showed facts, as follows: A cheese company purchased a steam generator from a manufacturer. At this time the manufacturer advised the purchaser that a steam separating tank should be attached to the steam generator to insure the delivery of dry steam under usual working conditions. The manufacturer built the generator and delivered it to the cheese company's plant. After the generator had been installed the cheese company's employes did not operate it properly and serious damage resulted. The cheese company refused to pay the contract price of the generator to the manufacturer. The latter then filed suit.

During the trial the counsel for the cheese company proved that the seller had no license in the state to install steam equipment. He contended that as the manufacturer had violated the state's license law, the manufacturer could not recover the agreed contract price for the equipment.

The higher court refused to agree and held that the cheese company must pay the manufacturer the full contract price, since the latter's negligence in operating the generator caused it to operate inefficiently. The court said:

"Appellant (cheese company) asserts that because respondent (manufacturer) was not licensed to install steam equipment, the latter was precluded from recovering. . . . Thereby appellant (cheese company) overlooks the fact that respondent's (manufacturer) claim was not based upon services rendered in installing the generator, but upon the contract price for the equipment delivered."

Mortgage Implication

The courts hold that in addition to impliedly guaranteeing the quality of the merchandise, a seller also gives an implied warranty that he has a right to sell the subject of the sale, and that the buyer shall have and enjoy quiet possession .of the merchandise. Also, the seller impliedly guarantees that the mer-

chandise is free, at the time of the sale, from any and all liens.

For illustration, in 236 S.W. (2d) 993, the testimony showed facts as follows: One Hickerson sold to the Ward Motor Company, a 1942 Model Ford Sedan for the sum of \$1,015, paid in cash. Shortly after the sale the Ward Motor Company sold the automobile to one Hughes, and in a short while thereafter the automobile was replevined from Hughes by the Security Investment Company by reason of the fact that the latter had a mortgage on the car which was in default.

The lower court decided that title to the car was vested in the Investment Company at the time it was sold by Hickerson to the Ward Motor Company. Hughes then recovered the purchase price of the car from the Ward Motor Company, and then a suit was filed by Ward Motor Company against Hickerson.

In holding that Hickerson must repay to the Ward Motor Company the full original purchase price, \$1,015, the higher court held that even though there was no express warranty of title in the bill of sale of the automobile, the law presumes an implied warranty of title by the seller.

of more than \$500 to one Winebarger. Later the seller decided to not sell the equipment to Winebarger who filed suit.

The higher court held the seller not liable for its refusal to sell the equipment on the verbal contract, and said:

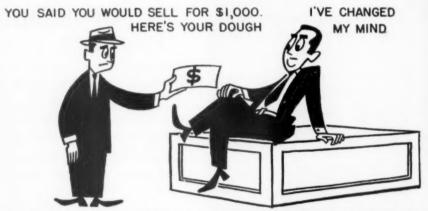
"If, in the absence of any memorandum in writing, the offer was voidable, it was subject to withdrawal at any time until acceptance concurring with the execution of a memorandum or part payment or performance following oral acceptance, notwithstanding the intention of the parties was to the contrary."

For comparison see 193 S.W. (2d) 763. There the seller had made a verbal offer to sell merchandise, but later declined to sell when payment was tendered by the customer to whom the offer had been made. The court held:

"It is clear that when McArthur remitted to Faw his check for \$16,-000, no enforceable contract had arisen obligating Faw to sell."

Notwithstanding this usual law, purchasers should keep in mind that always federal statutes supersede state laws.

For example, in 183 Fed. (2d) 524, it was shown that Ohio State



IN SEVERAL STATES, VERBAL CONTRACTS ARE NOT BINDING ON TRANSACTIONS OF MORE THAN \$500

A review of late and leading higher court decisions discloses that many purchasers lose law suits because they fail to familiarize themselves with elementary laws of their own state.

For illustration, various state laws provide that oral contracts to sell chattels or merchandise of the value of \$500 or more are unenforceable unless also in writing.

In 222 S.W. (2d) 231, the testimony showed that a seller verbally agreed to sell equipment at a price

Law provides that verbal contracts to sell goods of value of \$500 or more are not ordinarily enforceable. However, this court held that a verbal contract for the sale of \$700 worth of seed peas was not void under the state law in view of the Federal Perishable Agricultural Commodities Act. This court said:

"If the applicable state statute of frauds has the substantive effect of rendering a parol contract wholly void, it would have the same effect

(Please turn to page 322)



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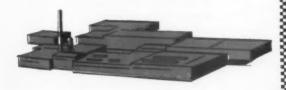


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New Products Ideas



Air Gage Features 10,000 To 1 Magnification



Pratt & Whitney, Division Niles-Bement-Pond Co., W. Hartford 1, Conn., has developed a new air gage with 10,000 to 1 magnification. It has a large gage dial and uses long wearing standard gage plugs. Magnification is obtained by use of a recently developed amplifying unit in conjunction with an adjustable restriction and large indicating dial. The unit is furnished with either one of two magnifications, 10,000 X or 5,000 X. A larger dial, five in. diameter with linear graduations increased to 180 deg. and arc length increased to eight times is used for easier reading.

High-Pressure Hydraulic Control Hose Withstands 5,000 Psi.

Quaker Rubber Corp., Division of H. K. Porter Co., Inc., Philadelphia. Pa., has developed a new line of high pressure hydraulic control hose capable of withstanding pressures up to 5,000 psi. The hose is reinforced with fine, high tensile steel wire to give maximum flexibility

and burst resistance under shock loads. This flexibility is retained at temperatures from —40 to 250 F. The rubber tube is especially compounded to resist all popular hydraulic fluids. The line of control hose consists of both high pressure (2 or 3-wire reinforced) and medium high pressure (1-wire reinforced) hose in sizes from 3/16" to 2" ID.

New Lift Trucks Feature Maneuverability, Compactness



Two new lift trucks, with capacities of 3,000 lbs., and 4,000 lbs., have, as their outstanding features, compactness, durability and maneuverability. According to the makers, Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore., they are the very latest in lift truck engineering and were "functionally" designed for appearance as well as efficiency. Both trucks have an overall length of 781/2 in. The 4,000 capacity truck will climb a 20% grade and the 3,000 capacity truck will climb a 24% grade, loaded or empty. Both trucks have a sharp turning radius of 75 in. and 30 in. of free lift on the standard 9 foot uprights.

Heavy Duty 71/4" Electric Saw

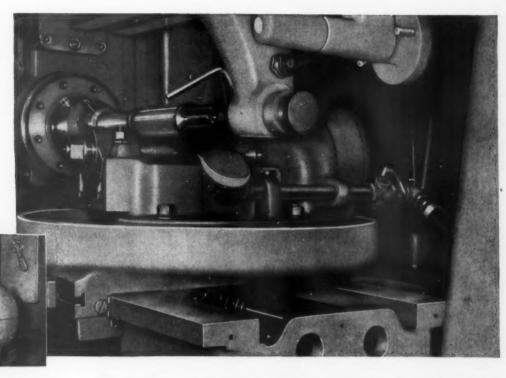


A heavy duty, portable, low priced, 71/4" electric saw for maintenance men has a powerful universal motor, ball and needle roller bearing construction, overhead type handle for easy one hand control, built-in rip fence and automatic telescoping blade guard with re-tracting handle. It is completely adjustable for depth of cut from 1/16" to 2-3/8" and for bevel cutting up to 45°. Weighing only 131/4 lb. it cuts 2" dressed lumber at 45° and cross cuts 2" rough lumber. The high speed of 5000 rpm makes it the perfect saw for cutting and scoring concrete, cement block, metal and composition materials. Made by Skil Corp., Chicago 30, Ill.

Gearless Angle Grinder

A gearless angle grinder which eliminates the need of bevel gears or any kind of gears is a development of Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. It is an air-powered direct drive angle grinder. With a speed of 6,000 rpm

(Please turn to page 128)





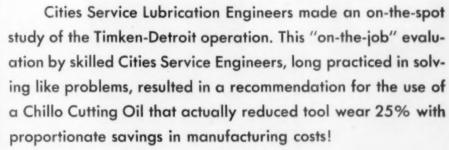
"ON-THE-JOB" CUTTING OIL TESTS BY CITIES SERVICE ENGINEERS!

at Timken-Detroit Axle Company

TOOL WEAR REDUCED 25%...MANUFACTURING COSTS ALSO CUT!



In an effort to reduce tool wear and cut manufacturing costs, the Wisconsin Division of Timken-Detroit Axle Company at Oshkosh called in Cities Service Engineers to make "on-the-job" tests.



WHAT ARE YOUR PROBLEMS? Why not take advantage of free, "on-the-job" testing? Call for our lubrication engineers at the office nearest you, or write Cities Service Oil Company, Dept. F31, Sixty Wall Tower, New York City 5, New York.



QUALITY FETROLEUM PRODUCTS

cold forged

metal fasteners

For (V) high quality material, (\vee) precise machining, (\vee) fast assembly, and (\vee) good appearance, specify CHANDLER cold forged metal fasteners. They are manufactured from tested high quality alloy steel by the most modern machinery and methods. Every fastener must pass rigid inspection to make sure it meets your specifications. This uniform high quality makes assembly faster, and smoothly finished heads assure good appearance of the completed assemblies.

Specialists in Alloy Bolts . . . Grinding to close tolerances . . . Drilled heads or shanks. Diameters 1/4" 5/16" 3/8" to 3" in length and diameters 7/16" 1/2" 9/16" to 5" in length.



1489 Chardon Road . Cleveland 17, Ohio

(Continued from page 126) at 90 psi, it has enough power to provide fast, safe, and efficient operation on practically all surface grinding, cut-off and sanding jobs Two types of handles, which may be attached to either side of the grinder, are available, one straight and the other 30 deg. off straight. This makes the tool easily adaptable for corner grinding or for right or left handed operators.

Space Heaters Feature Suspended Gas Fired Units



For those with their eye focussed on next winter's space heating requirements, Dravo Corp., Pittsburgh, Pa., announces the extension of its line of space heaters with the addition of suspended gas fired units. They are suitable for natural, manufactured, mixed, liquid petroleum, sewage or coke-oven gas and have input capacities ranging from 85,000 to 215,000 Btu per hour. The model D unit heater comes with a standard fan: the model DB with squirrel-cage blower for short duct runs; the model DD (without blower) is designed as a heating unit to be built directly into air-conditioning duct systems.

Low-Cost Floor Machine

Would you like to gain the advantages of mechanized floor maintenance and brighter, cleaner and more sanitary floors with reduced labor costs? Hild Floor Machine Co., 740 W. Washington Blvd., Chicago 6, Ill. claims to have the low cost floor machine that meets these requirements. It is equipped with a powerful 1/3 hp heavy duty vertical motor which requires no lubrication. The 121/2 in. brush spread and brush speed of 210 rpm assure lively action for a hard finish on all waxed surfaces. Attachments are available to scrub, wax, polish, buff, sand and steel-wool floors of all kinds. The machine with brush attached only weighs 38 lbs.

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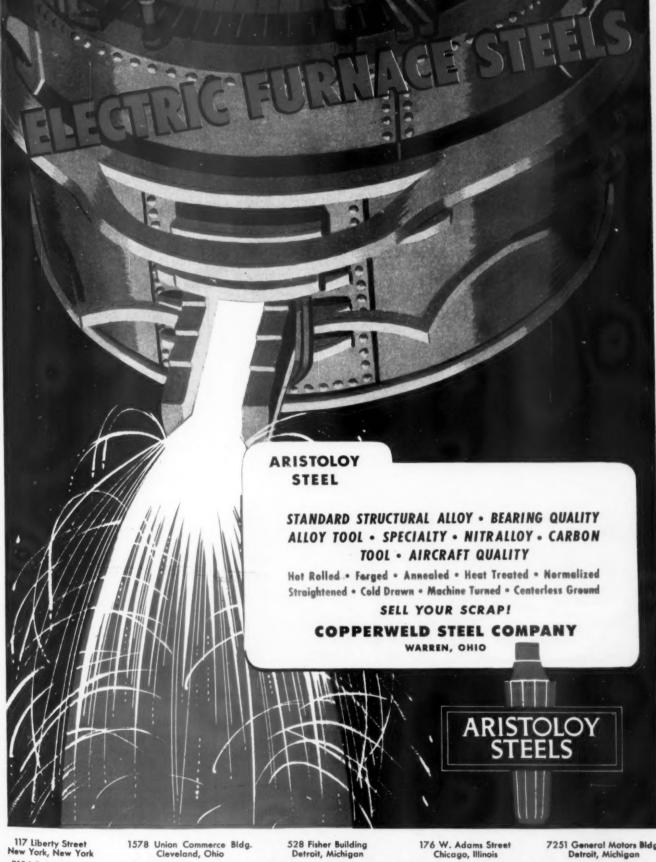




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Formerly it took 12 days to ship film from the eastern film producers to Hollywood.

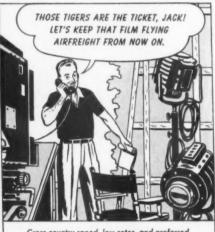
YES, MR. FRYE, THE TIGERS CAN CUT YOUR DELIVERY SCHEDULE —EASILY!



So I called in the Flying Tiger representative and arranged for a trial shipment.



Our trial shipment via the Tigers beat our old schedule by more than a full working week!



Cross-country speed, low rates, and preferred handling have kept us sold solid on the Tigers.



OFFICES IN PRINCIPAL CITIES . GENERAL OFFICES: LOCKHEED AIR TERMINAL, BURBANK 8, CALIFORNIA . CABLE: FLYTIGER

Mounting Prevents Damage To Flexible Shaft Machines



Damage to flexible shaft machines, caused by operators pulling the machine by the shaft from point to point, can be eliminated by a new type of portable mounting introduced by Franklin Balmar Corp., N. A. Strand Division, Woodberry, Baltimore 11, Md. The new truck mount consists of a hand truck with wheeled rear axle and front skids. The flexible shaft unit itself is mounted on the deck of the truck in such a position that one operator can push the unit from place to place by merely pressing down on the handle to lift the front skids from the floor.

Electroplating Power Supplies



Advances in operating convenience and efficiency are claimed by the Lighting and Rectifier Department of General Electric Company, Schenectady 5, N. Y. for its new line of metallic rectifier power supplies for electroplating and anodizing. The line includes manually controlled and automatically regulated power supplies, as well as special equipment for barrel plating and precision work. Maximum operating

(Please turn to page 132)

How Oxygen...and LINDE SERVICE*

\$700,000 FOR ONE STEEL COMPANY

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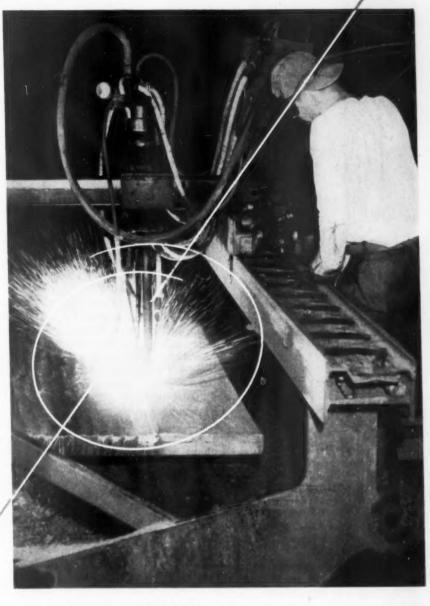
and

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"Burning the unburnable" was the problem that faced producers of stainless steel. This steel resisted scarfing and cutting—even with the intense heat of the oxy-acetylene flame.

Doing this work by mechanical methods meant sky-high costs. But that looked like the only answer—until LINDE SERVICE took a hand with the problem.

Working in the laboratory and inthe field, LINDE engineers developed powder cutting and scarfing. By adding powdered metal to the oxygen flame, stainless steel was scarfed and cut with ease and speed.



LINDE SERVICE IN ACTION! Powder cutting is saving this company alone over \$700,000 per year in the production of stainless steel. And they're making a better product.

This is but one example of how LINDE customers are saving millions of dollars each year through LINDE SERVICE. If you use oxygen, let us tell you how LINDE SERVICE can save you time and money, too.

LINDE SERVICE is the unique combination of research, engineering, and over 40 years of accumulated know-how that is helping LINDE customers save money and improve production in their uses of oxygen and oxy-acetylene processes.

LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation 30 East 42nd Street 1968 New York 17, N. Y.

In Canada: Dominion Oxygen Company, Limited, Toronto



THE REAL COST OF SHELVING
IS THE ERECTED COST



reasons why



De Luxe Steel Shelving

costs you less

- 1 Fewer Parts—DeLuxe has designed one part where ordinary shelving uses three. Example, our bin-type "I-Beam" upright. Fewer parts mean fewer man hours to install.
- 2 80% Less Bolts—DeLuxe shelving uses patented, boltless shelf brackets, thus requires no tools for either installation or adjustment.
- 3 100% Adjustable—Shelves in each section are independently adjustable, without disturbing other contents. DeLuxe shelving erects on the spot, in position where you want it . . . the only shelving that does all this.

There is a Deluxe factory representative in your area who will give you our engineering, planning and layout service without obligation. Write today for free catalog.



De Luxe Metal Furniture Co.

309 Struthers St., Warren, Penn.
For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

(Continued from page 130)

economy in each rating is achieved by using a variety of circuits and either copper-oxide or selenium rectifier stacks, depending on the output desired. Where especially corrosive atmospheres will be encountered, power supplies using oil immersed selenium stacks are available.

Plastic Hard Hat Prevents Head Injuries



To protect workers from head injuries, Willson Products, Inc., Reading, Pa., has designed a hard hat incorporating new features. The shell is molded in one piece of lightweight, moisture-proof plastic. It passes all required tests for impactresistance, pierce-resistance dielectric strength. It is also resistant to many industrial acids and caustics in commonly encountered solutions. There are two styles: one has a "buffer" type vinyl headgear with genuine leather sweatband and an elastic chin strap; the other has a lighter type vinyl headgear, also with a leather sweatband. Streamline contours effectively deflect falling or flying objects.

Device Rapidly Transmits Production Information

Transmission of essential up-tothe-minute information from production floor to production management will be speeded by the installation of an industrial Televoice system now available to industry. This is the way the system works: Foremen, supervisors, expediters, etc., pick up a 'phone in their immediate working area and talk their routine paper work, reports, requests, suggestions, etc. into the 'phone. This information is instantly recorded at a central recording machine which may be located floors or miles away, wherever information is coordinated. One girl picks up the recording plastic disc and immediately types the information for action by the appropriate person. Thomas A. Edison Inc., Orange, N. J. is the manufacturer.



STAR



Here's how to save at least 15% on power hack saw blade costs:

Ask your Distributor for STAR Moly Power Blades. You save 15% on initial blade cost—and you'll get extra economies from faster, more efficient cutting and longer blade life.

For over 70 years, STAR Blades have been quality blades—fine steel, carefully heat treated and processed on special machines of advanced design, makes STAR the blade you can count on.

BUY ALL YOU CAN

DISTRIBUTORS' STOCKS

STAR Blades are sold only through recognized distributors—your best source of supply for not only STAR Blades, but hundreds of other products which keep your production going. Your industrial distributor gives you fast delivery from local stocks. He is close to your problems. He has the help of qualified factory representatives who know the answers to your problems. Buy whatever you can from him.

1833



CLEMSON BROS., Inc. MIDDLETOWN, N. Y., U.S.A.

Makers of Hand and Power Hack Saw Blades, Frames, Metal Cutting Band Saw Blades and Clemson Lawn Machines. white FLOORS STAY WHITE NOW with White Onex-Sea

A Finish that makes White Cement •
Terrazzo • Magnesite • Marble

WHITER

The specialized sealing and finishing method recommended by Cement Manufacturers and the National Terrazzo and Mosaic Ass'n. to preserve and maintain original color and maximum light reflection of white floors in INDUSTRY for increased production, and reduced accidents.

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Months
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Minutes of Care!

No Yellowing!

Stops checking
and efflorescence!
Makes "seeing"
easier for workers!

No Waxing!

We believe there's never been a seal
that protects like ONEX-SEAL. And now
Hillyard chemists, after months of work, have
given original ONEX-SEAL a whitening power
that avoids yellowing in bringing dirt-marred white
floors to gleaming whiteness — an important factor, since
discoloration in white cement is not only unsightly,

but can decrease its reflecting value as much as 18%.

ONEX-SEAL applies quickly, penetrating into the pores — and when buffed after drying has a high lustre — achieving a slip-resistant finish that needs no waxing, can be maintained "dry" with only occasional mopping. When cleaning is required use Onexite, a white pigmented neutral cleaner specially formulated for white floors.

WRITE TODAY FOR DEMONSTRATION ON YOUR FLOORS

. . . On your staff



ST. JOSEPH, MISSOURI



Do you have production, purchasing, stocking or delivery problems on threaded fasteners? Pheoll...the COMPLETE source ... has all the answers! And here they are:

Pheoll has 'em . . . largest in the industry . . . kept up to level by perpetual inventory controls!

Pheoll has 'em . . . the industry's most complete line . . . by types, head styles, finishes and sizes!

Pheoll can generally ship immediately on most standard types and sizes!

phone calls, telegrams or letters!

Tops for 50 years . . . kept that way by constant production line and laboratory inspection!

Yes! Efficient mechanized order-handling procedures minimize errors and hustle orders along to fast, sure completion!

In every way, you get better service at Pheoll! That means less work for you...fewer orders, reduced paper work, less follow-up, simplified stocking. Test Pheoll on your next threaded fastener requirement and see how headaches vanish!

PHEOLL



SCREWS BOLTS NUTS

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Machine Screws
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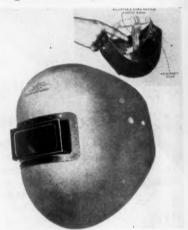
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Dragline Conveyor Floor Trucks Cut Handling Costs



Handling costs can be reduced and efficiency increased by dragline conveyor floor trucks, says Lewis-Shepard, Dept. R-5, Watertown, Mass. Its improved type with onepiece, arc-welded steel frame is made without bolts or rivets for permanent stability. The "A" frame design consists of two diagonal channels, two "V" type hangers, a tubular housing for the axle and the inside wheel washers, all welded into one piece. It is rigid in itself and can take any extra shock or abuse. The caster alignment and hanger mounting of main wheels assure a steady course at all times for the truck, preventing "weaving".

New Arc Welding Head Shield Designed For Operator Comfort



An arc welding head shield that has been specifically designed for operator comfort is a new product of the Lincoln Electric Co., Cleveland 17, Ohio. The feature of the shield is a permanently pliable head band made of plastic rather than the usual fiber. The adjustable plastic head band fits the head in the same way a hat does, giving a firm but comfortable fit through-

(Please turn to page 138)

"JACKSONVILLE OPERATES 9 CITY SERVICES WITH HELP OF 6-E TUBES!"

> Says JOHN CARTER, Chief Engineer, Signal Bureau, Jacksonville, Fla.

We're an electronically controlled city! The services that use various types of tubes, operated and maintained by the Signal Bureau, include police—county—fire—electrical—water—highway—auditing and sewer radio systems, also traffic lights and Civil Defense.

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"Jacksonville's safety and health depend on electronic performance, so tube dependability is a 'must'. That's why we put a high value on G-E tubes. We've used G-E rectifier, transmitting, and receiving types satisfactorily for years. They've rolled up some mighty fine life records, too—up to 2 years' continuous tube service in several cases! GL-807's in mobile work have given 5 years' intermittent service and are still going strong!

"That means replacement money saved.

Naturally we're pleased! And we're more than satisfied with the fast service we get at all times from G-E tube distribution in Jacksonville."

G-E tubes will serve you as dependably, as economically as they do the city of Jacksonville . . . and you'll find that your local G-E tube distributor is ready to make fast deliveries and give help on tube problems. Phone him today! Tube Department, General Electric Company, Schenectady 5, New York.





Above: Jacksonville's electronic "nerve center" is the semi-cir-cular console in front of Chief Engineer Carter. Behind him are transmitters that operate on four frequencies between 37.5 and 155.67 mc, each handling the radio communications for one or more municipal services.

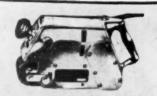
Left: Robert Reid, acting Chief Operator, explains to the driver of a Signal Bureau maintenance truck the nature of his job assignment. Mobile equipment always is in readiness to make field repairs though the need for these is kept down by periodic inspections and a fine record of tube dependability.

GENERAL ELECTRIC

JUNE, 1953

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137



"WE HEARTILY RECOMMEND LUBRIPLATE LUBRICANTS"

—says PORTER-CABLE MACHINE CO., Leading mfrs. of portable electric tools

V "LUBRIPLATE reduces drag, permits easy starting, quiet operation and protects our machine parts against progressive wear. LUBRIPLATE is initially applied to our tools at the factory. For future lubrication by users, we secure LUBRIPLATE packed in tubes for distribution through our dealers."

For nearest Lubriplate distributor, see Classified Telephone Directory. Send for free 56-page "Lubriplate Data Book"... a valuable treatise on lubrication. Write Lubriplate Division, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

AND TYPE OF YOUR MACHIN-ERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.



(Continued from page 136)

out the day. The band is adjustable to fit both around and over the head, and can be put on with one hand. The plastic does not dry out and curl as does fiber but remains soft and pliable. The shield takes the standard size of 2" x 4½" lens and glass.

Barrel Finishing Unit Has Interchangeable Parts



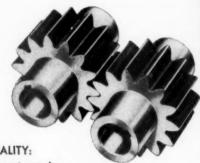
An efficient, improved barrel finishing unit, designed to burnish and de-burr and for cutting-down operations, is made by the Abbott Ball Co., Railroad Place, Hartford, Conn. It is compact and has its power supplied by an electric motor mounted on the barrel pedestal. In-

terchangeability of parts adds versatility and economy to the new unit. Since end plates and side walls of tumbling barrel bodies tend to wear out faster than other parts replacements are an important consideration. By providing interchangeable parts for the new barrel substantial savings can be realized as the whole barrel will not have to be replaced.

Permanent Magnetic Hopper Magnet Removes Iron

iron contamination from many free flowing materials either for reasons of product purification or for protection of machinery, is an ever recurrent problem. The Eriez Mfg. Company, Erie, Pa., has developed an entirely new permanent magnetic hopper magnet to take care of it. The hopper unit consists of a series of steel discs spaced at 1" centers with cylindrically shaped, powerful Alnico V permanent magnets occupying the snaces between the discs The steel discs serve as pole plates for the magnets, and have been designed to cause symmetrical and efficient distribution of the magnetic





In gears, HQ stands for HIGH QUALITY:
HQ gears must meet the most stringent requirements, must do the toughest jobs efficiently. And for the best in custom-made HQ gears — where quality really counts — many smart gear buyers rely on The Cincinnati Gear Company. Each gear is individually made to meet specific requirements, produced to exacting standards, and backed by Cincinnati Gear's reputation for producing only good gears. If your next job demands HQ custom gears, write, wire or call today for further information.

SPUR
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SPIRAL BEVEL
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HERRINGBONE
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THE CINCINNATI GEAR COMPANY

"Gears ... Good Gears Only"

Wooster Pike and Mariemont Ave. • Cincinnati 27, Ohio

Precision Home-Cutting Know-How
Curs Costs. Saves Time. Speeds Output

Electric Eye Assures Close Tolerance

QUICKLY CUTS COMPLEX SHAPES -- FROM 3/16" TO 10" PLATES

t's a happy combination of--electronically controlled multiple flame cutters...plus ...highly skilled, widely experienced operators with years of flame-cutting knowhow--that enables A. M. Castle & Co. to save time, money, and material for customers who want simple or complex prefabricated steel parts in a hurry.

SAVES MATERIAL... REDUCES MACHINING COSTS

In one case, a customer was fabricating a special part--at a machining cost of \$1.00 each. Castle precision flame-cutting experts produced the part, with equally close tolerance, in a fraction of the original time...and... at a cost of only 6¢ each. A net saving of 94% for the customer. It's highly possible that Castle can produce similar results for you, too. For everything in steel--flame cut if you want it--phone Castle today. No obligation, of course.



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Electric Box Draw Tempering Furnace For Batch Drawing

An electric box draw tempering furnace designed for applications requiring no protective atmosphere is available from Westinghouse Electric Corp., Box 2099, Pittsburgh 30. Pa. This type furnace is used for batch drawing or tempering high volume work that can be handled on trays. Maximum operating temperature of the furnace is 1400 F and an automatic temperature control accurately regulates any set heat within this range. A high velocity centrifugal fan provides uniform air circulation over the heating elements and around the charge. The furnace is available in six sizes ranging from 15 by 24 by 12 in. to 42 by 72 by 30 in.

Rubber-Cushioned Abrasives Solve Finishing Problems



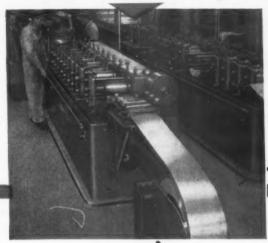
The growing demand for rubbercushioned abrasives has brought with it the need for new textures to solve many specialized finishing problems arising from new methods and materials. Weldon Roberts Rubber Co., Sixth Ave., N. 13th St., Newark 7, N. J., claims that the Brightboy BL series of rubber-cushioned abrasives fill this need. They are available in three grades: coarse, medium and fine. The textures are made in a variety of sizes in wheels, discs, sticks, rods, cylinders, tablets, and blocks for machine and manual use. The abrasives work on all metals and do many jobs on glass and plastics.

Adjustable Floor Plates Provide Accurate Level

Adjustable floor plates, which can be furnished as single units up to 54 in. wide and 144 in. long, have been added to the line of precision equipment made by the Challenge

(Please turn to page 142)

You don't have to buy these ··· to produce these ··· :--



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WHEN YOU BUY ROLL FORMED SHAPES from REYNOLDS

and you don't increase plant facilities or equipment investment



MEMO TO PURCHASING AGENTS:

Write for your free copy of the new catalog "Aluminum Roll Formed Shapes by Reynolds." Reynolds Aluminum Fabricating Service offers the capacity for prompt, economical, volume production of your aluminum roll formed shapes . . . and Reynolds sizable investment in roll forming machines and tooling eliminates the need for any capital investment on your part in added facilities and equipment. Many hundreds of standard roll formed shapes are available at Reynolds for producing parts for automobiles, trailers, furniture, awnings and thousands of other products. Tooling for special shapes can also be supplied by Reynolds.

For economy, dimensional accuracy, better finishes and design flexibility—specify aluminum roll formed shapes from Reynolds. For full details, call your Reynolds office listed under "Aluminum" in your classified telephone directory or write Reynolds Aluminum Fabricating Service, 2056 South Ninth Street, Louisville 1, Kentucky.

SEE "Mister Peepers" Sundays, NBC-TV. HEAR "Fibber McGee and Molly" Tuesdays, NBC-Radio. Consult local listing for time and station.

REYNOLDS ALUMINUM

FABRICATING SERVICE

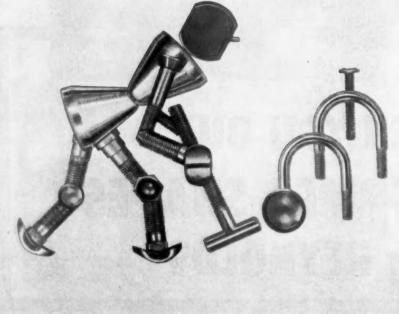
BLANKING . EMBOSSING . STAMPING . DRAWING . RIVETING . FORMING . ROLL SHAPING . TUBE BENDING . WELDING . BRAZING . FINISHING

June, 1953

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141

You can't lose!



Whether your fastener requirements call for special bolts... or standard... you can get experienced cooperation and service from Buffalo Bolt.

In using Circle (a) specials...you can often simplify product design...gain extra holding strength...speed assembly... and cut your unit costs.

In specifying Circle ® standard bolts . . . you get quality built in by modern methods and machines designed to meet your volume demands.

In both cases, you can depend upon the experienced counsel of a concern which is satisfactorily supplying leading industrials known for their purchasing and production efficiency.

Let us discuss and demonstrate to you the many practical advantages of dealing with Buffalo Bolt. Your inquiry will receive our prompt attention.

BUFFALO
BOLT COMPANY

Division of Buffalo-Eclipse Corporation
North Tongwanda, N. Y.

Sales Offices in Principal Cities

PRODUCERS OF CIRCLE @ PRODUCTS - BOLTS . NUTS . RIVETS AND SPECIAL PASTENERS

Machinery Co., Grand Haven, Mich. They provide an accurate level and substantial plate that can be placed directly on the floor without any superstructure, and can be leveled with adjusting screws through the top of the plate. The leveling adjustment is accomplished by means of hardened screws located around the edge of the plate and at each intersection of the ribbing. The adjusting screws are locked in position by locking screws. The holes are covered by caps.

Device Raises or Lowers Trucks To Dock Height



The Adjust-A-Truck, a device designed by Rowe Methods Inc., 2534 Detroit Ave., Cleveland 13, Ohio, raises or lowers over-the-road carriers to dock height. It is ideal for firms which do not have adequate room on their docks or in front of their docks to install adjustable dock ramps. The unit is set into the pavement in front of the dock and by means of heavy-duty electric hydraulic system adjusts each vehicle to dock height. Its capacity is 40,000 lbs. Raising and lowering of the device is instantaneous.

Announce New Line of General Purpose Relays

The operating life of general purpose relays made by the Control Dept. of General Electric Co., Schenectady 5, N. Y., has been greatly extended, according to G-E engineers, by use of a braided shunt and repositioning of the shunt to reduce tension and wear. Use of the standardized open-form relays with conversion kits, which may be stocked separately, provides units with greater utility and permits reduction in inventory. The relays, designated as CR2790-E, are rated from 6 to 300 v, 60, 50, and 25 cycles plus d-c, and 10 amp continuous contact rating. The relays may be used as starters for small a-c motors where they have overload protection.

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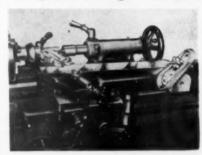
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TOLEDO 2, O.—Williams & Co., 650 E. Woodruff Ave. TULSA, Okla.—Ardun Supply Co., 317 S. Detroit TULSA 3, Okla.—Metal Goods Corp., 302 North Boston CANADA—Railway & Power Engineering Corp. Ltd. EXPORT—Mercator Corp., 438 Walnut St., Reading, Pa.

Inorganic Coloring Formula Aids Chemical Identification

A new, patented formula of inorganic coloring developed by the Diversey Corp., 1820 Roscoe St., Chicago 13, Ill., answers a long standing need for quick identification to end mixups between disinfectants and other chemical compounds. The coloring is used to add a distinctive pink coloring for ready identification of Diversol CX, a new bactericide-disinfectant cleaner that helps control bacteria. mold and yeast and guards against spoilage. The product is 100% soluble, stable, non-corrosive, has superior water softening and powerful penetrating action. It will not stain equipment. It is packed in 325 lb. barrels and 125 and 25 lb. drums.

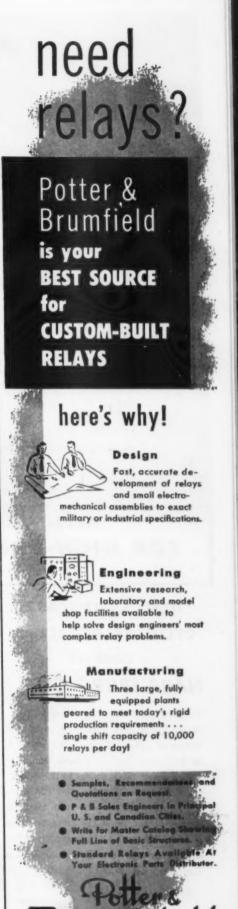
Profile Tracing Attachment Designed For Engine Lathes



An inexpensive profile tracing attachment for engine lathes is being manufactured by the Air Control Division of Lehigh Foundries Inc., 1500 Lehigh Drive, Easton, Pa. Its design makes it virtually foolproof and, once set up, the Pro-Tracer can be operated by semi-skilled labor. Its extreme versatility adapts it to many different applications. It is ideal for runs too short to warrant the set-up time necessary when using "long run" equipment, yet its heavy duty construction enables small shops to produce sizable quantities of turnings, impossible previously because of limited facilities. It can be used on lathes handling up to 13" work.

Fast Acting Valve Featured On New Fire Extinguishers

A simplified and faster acting valve features the latest line of portable carbon dioxide fire extinguishers announced by American-La France-Foamite Corp., of Elmira, N. Y. Five models of this design are available with a weight capacity of 2½, 5, 10, 15 and 20 lbs., (Please turn to page 146)



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42



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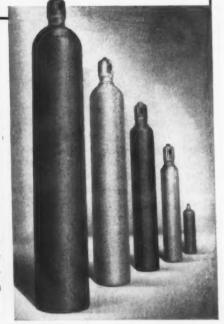


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respectively. The increased simplicity of design permits disassembling for servicing without special tools and faster operation as a squeeze lever directly over valve stem gives quicker discharge. There is also easier leverage as the hand squeeze needs only finger pressure. The syphon tube is removable and safety disc is side mounted for added protection against damage.

New 4,000 Lb. Fork Truck



Higher maximum fork elevation, increased free lift, faster travel speed, ability to right-angle stack in narrower aisles, lighter chassis at no sacrifice of stability and sitdown operation with a new high in convenience of control are some of the advantages claimed for a new 4000 lb. fork truck made by Mercury Manufacturing Co., 4044 S. Halsted St., Chicago, Ill. Maximum fork elevation has been increased to 130", free lift to 58", and travel speed to 6.5 mph. With the outside turning radius shortened to 79", the truck is able to right-angle stack 36" long loads in 101/2' aisles.

Taper Attachment Improves Turning Ability of Lathes

A taper attachment developed by Associated Engineers, Inc., Springfield, Mass., improves the taper turning ability of standard turret lathes. using the combined feeds of the hex turret and cross slide. The range of angles which can be cut by the attachment is infinite within the range of the machine which is as follows: the practical minimum angle is approximately that which can be produced by combining the maximum longitudinal feed of the hex turret with the minimum crossslide feed. The maximum is 90 degrees with the axis of the workpiece. Angular surfaces can be machined internally or externally on the periphery or face of the workplicbling tools deeze gives also deeze The affety pro-

SYNTHANE — making bigger payloads pay off

Synthane bushings, spacers, and bearings in the landing gear of this giant of the skies share the landing shock loads of twenty-five tons. But Synthane parts have many virtues in addition to their ability to withstand the jolts of heavy landings.

Parts made of this hard-working laminated plastic are unaffected by oils, and are dimensionally stable. They resist abrasion, and weigh half as much as aluminum.

Because Synthane is so easy to machine,

it is appropriate for fair-leads and cablesheaves in control systems. Because it is an excellent electrical insulator, you will find it at work in engine ignition systems, flight instruments, automatic controls, and radar sets. Because Synthane is light and corrosion-resistant, it's used for the flapper valves in fuel cell baffles.

Synthane has all these properties and many more. It might be a good material for you to try. Start by sending for the complete Synthane Catalog. Synthane Corporation, 9 River Road, Oaks, Penna.

IS YOUR ANSWER HERE?

If you are not in the aircraft industry, Synthane's combination of properties may still stir your interest. Besides the properties at the left, Synthane has good tensile, compressive, flexural, impact and shear strength, a low coefficient of expansion, is moisture- and wear-resistant, easy to machine.



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Synthane-one of industry's unseen essentials



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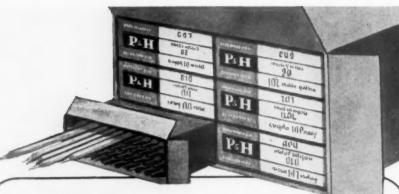
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1/4" Heavy Duty Drill Bores 2-9/16" Hole Through Hardwood



According to R.C.S. Tool Sales Corp., of Joliet, Ill., its new 1/4" heavy duty drill will bore a 2-9/16 in, hole through hardwood. This feat is accomplished through a combination of a unique right angle attachment offered in a kit with 10 new super speed bits. The new right angle drive triples the range of drills by adding two more speeds to their operation. It converts 1/4 in. capacity drills of 2000 rpm to 1000 rpm with 80% more power and reverses this gear ratio in seconds by simply snapping off and on for high speed drilling of sheet metal, etc. The compact design of the tool allows drilling in confined locations.

Machine Detects Most Minute Leaks in Fluid Systems



A new portable leak test machine will detect the most minute leaks in complex or inaccessible fluid systems says Device Engineering, 1701 Walnut St., Philadelphia 3, Pa. The machine, operating on the fall-inair-pressure principle, is easily adjustable throughout the range 0 to 20 psi within less than 1" water and repeatable within 2" water. This close air pressure regulation is provided through a unique arrangement of pilot loaded free diaphragm regulators, one being for pressure reduction, the other for relief. Settings of the machine are foolproof against unauthorized tampering.



Here's how to cash in a crippled motor for a fully guaranteed replacement

Through the Westinghouse Motor Exchange Plan, your company can release money tied up in stand-by motors and renewal parts... money that can be profitably employed in your own production. Under a most unique service policy, Westinghouse has set up a motor replacement pool for crippled motors. This Motor Exchange Plan makes available to you an immediate, fully guaranteed replacement for single or three-phase Life-Line* motors, under 20 hp, in frame sizes 203 to 326.

Quick over-the-counter replacement of Life-Line motors is handled at exchange points in 127 key manufacturing and production centers. If you are not located near such a warehouse, your local Westinghouse Sales Office will gladly expedite shipment of a replacement motor to your plant.

With fast service of this kind, you can substantially reduce or eliminate stand-by motors and renewal parts. You'll find, too, that using the Motor Exchange Plan will release maintenance, labor and equipment, necessary for repairing motor damage, to work on more important jobs.

Investigate the Motor Exchange Plan soon with your local Westinghouse Salesman. He will leave with you a complete description of the plan contained in this pamphlet, SM-5243; or write today for this information, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

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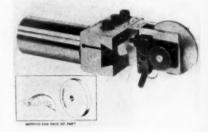
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MANUFACTURERS OF TACKLE BLOCKS, WIRE ROPE, ROPE FITTINGS-ESTABLISHED 1871

New Device Marks End Face of Parts



It is now possible to die mark part numbers, patent numbers, trade marks, etc., on the end face of parts during the machine cycle. A new marking device, which New Method Steel Stamps, Inc., 147 Jos. Campau, Detroit 7, Mich., has added to its line of autom-roll markers, is responsible. Suitable for both light and heavy work on automatic and hand-operated screw machines, bench and turret lathes, etc., the new marker is useful for marking end faces of parts on any diameter of face 11/2" and up. According to the manufacturer, the marker eliminates the need for separate setups for marking, thereby reducing cost, scrap, etc.

Light, Small Power Drive Now Available



Beaver Pipe Tools, Inc., Warren, O., says it now has the lightest and smallest power drive available. The lightness has been effected by replacing the old cast steel-iron metal housing and chuck with aluminum, resulting in the weight of the model being about 100 lbs. The unit has more convenient location of the switch, lever safety-lock on switch and bronze spindle bearings. It has a heavy duty 1/8" to 2" chuck, enclosed gears running in oil and weatherproof motor. One man can lift the unit and it can be used easily on bench, truck or with pipe legs right on the job location.

Tackle Blocks avail-

able on request.

Nancina 200

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Machine Wraps Products Tightly



Using a new "tight and loose" attachment, a wrapping machine developed by the Hayssen Manufacturing Co., of Sheboygen, Wis. will wrap material tightly around a product. It folds the wrapping material around the product which is carried forward over rubber rollers than can be set to squeeze the package as tightly as necessary to insure a perfect, tight wrap. At the same time, the package is pressed to eliminate any air space between the product and the wrapping material. The wrapping machine is extremely versatile and is available in various models capable of handling packages 3" to 24" in length, 2" to 11" wide and 1/16" x 21/2" high.

Commercial Light Generator Speeds Production Inspection



The largest commercial light generator available to industry today speeds production inspection with optical flats. Made by the DoAll Company, 254 N. Laurel Ave., Des Plaines, Ill., it features a 20" diameter, high intensity light source. The instrument was developed to meet industrial demands for greater capacity so that large parts or large numbers of smaller parts can be checked more easily and rapidly for surface flatness, finish, dimension, etc. Also, it is intended to facilitate the use of large optical flats up to 10" dia. The 24" work height capacity of the light generator permits parts of considerable thickness to be inspected.

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Such operations as piercing, forming, swaging, embossing, twisting, curling and reforming from coiled stock are completely finished. This is especially advantageous where forming around a mandrel is required. Typical parts, economically produced are: clips, contacts, bearings, terminals, connectors, rotors and tubular shaped parts of light stock.

Other equipment enables us to handle material up to $\frac{3}{8}$ " on press beds 49" x 72" at pressures of 250 tons. Drawing 4" deep—Coining to 400 tons. Special valves, shims and other exacting work are economically produced to rigid specifications.

Modern material control methods are utilized to cut costs and maintain efficient, low-cost volume production.

We invite your inquiry for quotations on parts to your specifications.

Write for a copy of our new Multi-Stamping Brochure which illustrates our plant facilities in detail.



New Radial Arm Machine



De Walt Inc., Lancaster, Pa., is now in production on a new radial arm machine known as the model GA. It incorporates a radial arm 11/2" longer than the model GR. which the new machine replaces. The roller head carriage, supporting the overhead cutting member. now rides on eight bearings instead of four as previously. Four of the grease-packed, double row ball bearings are set at a 90 deg. vertical plane to absorb the extra thrust from rafter notching, compound angle cutting, etc., while the other four bearings are set at a 45 deg. angle to absorb the side thrust created through normal sawing ac-

Also Noted ...

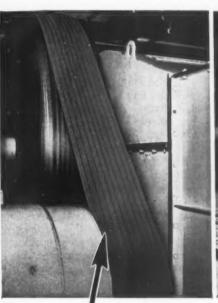
A new woll primer-sealer, developed by Bruning Brothers, Inc., Baltimore, Md., completely primes and seals wall surfaces in one coat and dries in 20 minutes to two hours so that finish coat can be applied the same day. The product contains a polyvinyl acetate formulation which provides superior adhesive strength and durability. It seals spackle joints and bridges fine cracks, assuring a uniform finish coat surface.

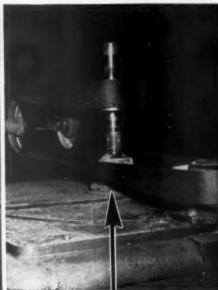
An improved method of removing dust has been developed by Parlee Co., 829 Ft. Wayne Ave., Indianapolis, Ind. The former method of using oil treated dust mops or cloths did not remove all the dust and, in any case, caused smears or stains on merchandise. The use of Parlee's new chemical fluid enables cloths and mops to remove accumulated dust without leaving stains or spots.

Minnesota Mining & Mfg. Co.. St. Paul, Minn., announces a pressure-sensitive paper tape for sealing cartons that sticks "at a touch." Its (Please turn to page 160)

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For smoother, neater, faster work, Pittsburgh Red Stripe brushes are your best bet! Red Stripe combines hogs' bristle with scientific Neoceta—Pittsburgh's new wonder-bristle designed specifically for painting. Both bristles wear at the same rate... your assurance of better performance and longer life!

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PITTSBURGH

Red Stripe



PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

(Continued from page 158) construction is designed especially for carton seal applications that must hold under all weather and handling conditions. The new tape is made with a special 60 lb. paper backing that makes it stronger and more waterproof than any other carton sealing tape.

One of the first attempts to reduce air noise caused by air discharge in high speed air-operated spindles, has succeeded at Vulcan Tool Co., 730 Lorain Ave., Dayton 19, Ohio. The muffler, now being installed in all jig grinders and spindles made by the company eliminates approximately 60% of air noise due to discharge,

A wrapping product made by Chippewa Products Co., Inc., of Chicago, Ill., in conjunction with Kimberley-Clark Corp., Neenah, Wis., combines the advantages of the outside shock resistance of Chippaflex flexible corrugated and the inside soft, non-abrasive cushioning of Kimpak. It has important applications in shipping with highly polished wood or metal surfaces and delicate instruments of any kind.

Sounds are deadened by use of a ceiling tile manufactured by Mastro Plastics Corp., 3040 Webster Ave., New York 67, N. Y. Made of a high impact plastic material and measuring one foot square, the tiles are made in a wide range of decorator colors and pastels. They can be easily installed by either nailing to the ceiling or using adhesive. The tile has a high rating of sound absorption besides being decorative.

The cost of buying special length drills for hard-to-get-at drilling locations is eliminated by versatile drill extension rod and chucks fitting over 52 small diameter drills without time consuming brazing or soldering operations. The manufacturer is the Beaver Tool Co., Huntington, Long Island, N. Y.

Cleaning operations are made much less costly, according to James Good Co., Susquehanna Ave., and Martha St., Philadelphia 25, Pa., by using their cleaner concentrate having a triple action. Known as DCD-35, it disinfects, cleans and deodorizes in one operation. It thus saves time, labor and storage space.

Special smoking or danger areas can now be permanently marked (Please turn to page 162) "Best Helper in the Hospital!"

I SOPROPYL ALCOHOL—long a major industrial solvent—is known in medical and pharmaceutical circles as an effective bactericide and antiseptic.

Doctors and nurses rely on it. Isopropyl Alcohol is used in rubbing compounds... for sterilizing surgical instruments... to disinfect skin before surgery and as a solvent in

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These screws have a BUILT-IN "STOP SIGN"



Atlas spanner-head screws say "STOP" to pilferers or other unauthorized persons. When these fastenings go in, things stay put. This built-in "stop sign" makes them ideal for a wide variety of uses . . . vending machines, radio and television sets and many other products. • Atlas spanner-head fastenings are available from stock . . . in popular sizes and heads . . . in wood screws, metal screws and machine screws. • Drivers can be supplied inexpensively. · For prompt quotations, submit your requirements

giving details, specifications and delivery dates.

450 BROOME STREET . NEW YORK 13, N. Y.



(Continued from page 160) with a brilliant fire-engine red plastic aisle marker made by Traffic Safety Supply Co., 27th and Sandy Blvd., Portland, Ore. These markers had previously only been available in yellow or white. They can be put down on any kind of floor and require no further attention, Unlike painted lines they do not become faded and dirty.

Troubles of sludging and scaling in tanks and pressure-spray washing are held to the absolute minimum by use of a new phosphatizing material which creates a complex zinc phosphate coating on steel and iron. It promotes excellent adhesion of paint to metal and may be used in tanks and in pressure-spray washing machines. Additional information may be had from Oakite Products, Inc., 154 Rector St., New York 6, N.Y.

Ohaus Scale Corp., 1050 Commerce Ave., Union, N.J., announces a new type balance with a micrometer poise. This poise enables it to be used for a range from 0.5 to 1000 grams without additional weight. The capacity is 5000 gram and the sensitivity 0.5 gram. As an additional feature, the balance has an undivided tare beam of 1 lb. capacity. Poise barrel is calibrated in .5 gram increments.

Safe operation of freight elevator shaftway gates or doors is ensured by a simple and rugged safety interlock that prevents the elevator from operating until they are closed. The lock also prevents the gates or doors from being opened when the elevator is away from the floor level. The interlock is adaptable to new and old installations. Made by Gilbert, Inc., 1105 Frankford Ave., Philadelphia 25, Pa.

An immersion heater for alkaline bath heating is claimed by the manufacturers, Cleveland Process Co., 7016 Euclid Ave., Cleveland 3, Ohio, to have long service life. The heater has proved successful in high alkaline solutions and copper plating baths. It can also be used in vapor degreasers, and for heating alkaline plating baths such as brass, bronze, cadmium, gold and silver.

Accidents to eves and face are claimed to be minimized by a safety rubber hoist handle made by Byron Jackson Co., PB Division, 1900 E. 65th St., Los Angeles 1, Calif. It is designed to fit all hoists using sepa)) ed plas-Traffic Sandy mark-

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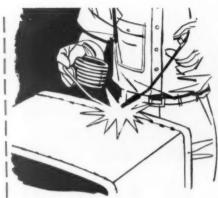
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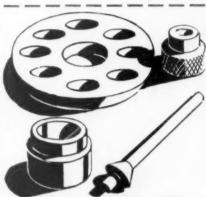
*FASTENERS of Aluminum are made by Alcoa in every commercial size and shape. A must with aluminum assemblies, they also dress up wood and plastic products.



*FILLER METAL of Alcoa Aluminum is available in many alloys for use in brazing, torch welding and arc welding. It is also packed suitably for automatic welding operations.



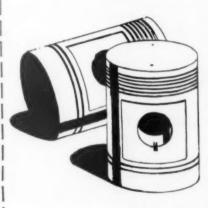
*RIGID CONDUIT of Alcoa Aluminum is the lowest cost corrosion resistant metallic conduit available. Its nonmagnetic properties improve electrical efficiency-its light weight speeds installation.



SCREW MACHINE PRODUCTS made of Alcoa Aluminum are light, lustrous and low cost. Alcoa's Edgewater, N. J. Plant is a screw machine job shop, turning out all types of fittings, special fasteners, etc., to customer specification.



*INDUSTRIAL BUILDING SHEET of Alcoa Aluminum is light and easy to install. It never requires painting or maintenance-costs far less than you would think.



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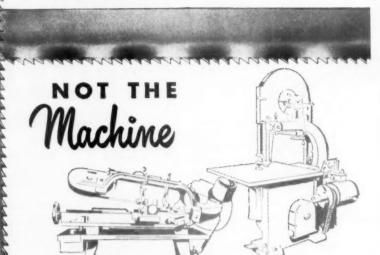
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(Continued from page 162)

rate pulls for raising and lowering. Responsible for greater safety are non-slip quality of handle and rub. ber construction without sharp edges or surfaces.

Manufacturers of aerosol dispensed products will be interested in a valve, developed at Oil Equipment Laboratories, Elizabeth, N.J. It permits loading of both product and propellent through the valve itself without need of refrigeration There is also easy regulation of the spray. The valve can be used on Crown cans, seamed cans - in fact on any type of pressurized product package - without danger of clog-

A product said to be a complete cleaner, disinfectant, sanitizer and deodorant, doing all four jobs in one operation and in less time than it takes for cleaning alone is named "Just". It is made by Associated Just Distributors, Baltimore 31, Md. It saves valuable man hours and materials and answers problems of fast, thorough floor maintenance.

Would you like to cut truck tire costs as much as 35%? That is what the B. F. Goodrich Co., Akron, Ohio, claims that its new heavy duty highway truck tire with a "wonder tread" has done for leading truck fleets. The compressed tread is more abrasion resistant and helps prevent tire growth and tire cracking. It is available in sizes ranging from 6.50 - 20 6-ply to 11.00 - 22 14-ply.

The Connecticut Hard Rubber Co., Inc., New Haven, Conn., has developed a new shock and vibration isolator. Called the Cohrlastic DS Non Linear Mount, the unit provides the ultimate shock and vibration protection for electronic equipment, delicate instruments, aircraft engines and a wide variety of equipment which can suffer damage in use or shipment. It can also serve as shock mounting under heavy machinery.

For as many years as rubber floor matting has been widely used in industrial, commercial and institutional installations, there has been a great demand for a satisfactory cleaning compound. Mat Corp., Toledo, Ohio, says it has developed an ideal product for the purpose. It cleans safely rubber of all types and color, as well as many other types of flooring.

Office Equipment and Supplies section of PURCHASING Magazine

JUNE, 1953

Well trained office personnel operate Texas Eastern Transmission Corporation's IBM key punch machines and verifiers in the company's new Texas Eastern Building, Shreveport, La.



PURCHASING MAGAZINE - A CONOVER-MAST PUBLICATION

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Many Factors Determine Costs of Office Lighting

By William G. Hildebrand

THE cost of office lighting does not end with the installation of new lighting fixtures. It goes much further, in fact, and serious consideration should be given to the costs of maintenance and repairs, the quantity and quality of light obtained from the lighting system, and its effects on the morale and production of office personnel.

The Office Lighting Committee of the Illuminating Engineering Society has made a detailed study of office lighting which has been published in a booklet entitled "Recommended Practice of Office Lighting." The study, which deals fully with factors to be considered to obtain ideal office lighting conditions, can serve as a guide for purchasing agents who are faced with the problem of replacing an outdated lighting system in their present offices or paying for the installation of modern lighting systems in new

In a non-technical interpretation of the IES report, Robert L. Zahour

TABLE OF FOOTCANDLES

FOOTCANDLES CURRENT RECOMMENDED PRACTICE

NATURE OF WORK

DIFFICULT SEEING TASK (a) Discrimination of fine details as 6-8 point type.
(b) Poor contrast.

Such as:

Auditing and Accounting Business Machine Operation Transcribing and Tabulation Bookkeeping

Drafting Designing

ORDINARY SEEING TASKS 30

Involving:

- (a) Discrimination of moderately fine detail such as 8-12
- point type.
 (b) Better than average contrast.
 (c) Intermittent periods of time.

General Office Work (except for work coming under "Difficult Seeing Tasks" above) Private Office Work General Correspondence Conference Rooms Active File Rooms Mail Rooms

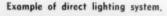
CASUAL SEEING TASK

Inactive File Rooms Reception Rooms Stairways Washrooms, and other service areas

SIMPLE SEEING TASKS

Hallways and Corridors Passageways

Example of semi-indirect lighting system.







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of the Westinghouse Lamp Division, Bloomfield, N. J., pointed out that "the fundamental purpose of lighting is to provide efficient and comfortable seeing as an aid to office activities." The four basic important factors to be analyzed when considering light for comfortable seeing are, he said: (1) The eves, their condition and position; (2) the nature of office work; (3) the lighting, quantity and environment quality; (4) economic factors.

In all offices, the light for seeing must be comfortable and adequate for not only persons having normal eyesight, but also for those with defective vision. Studies coordinating visual response under various levels of illumination show that as lighting levels are raised, the speed of seeing increases. Since 87% of our muscular responses are controlled by vision, it becomes apparent that the quicker one sees, the faster he can work.

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In discussing the nature of office work, Mr. Zahour points out that since most office tasks involve considerable reading, the ease of seeing in such cases depends largely on size and contrast. The work itself can be improved by changes in the quality of paper stock, type size and face, printing, and size of rules or guides on office forms. Contrasts that permit comfortable reading are also important. While clear black print on non-glossy paper offers the greatest readability by virtue of maximum contrast, many office tasks consist of gray against a background of lighter gray, or medium colored lines against light colored backgrounds. It is obvious, therefore, that with a combination of difficult as well as ordinary eye tasks which exist in offices, there is a definite need for adequate, uni-

COMPLETE EXPENSE ANALYSIS

SEMI-INDIRECT SYSTEM

LIGHTING LIGHTING METHOD METHOD

#2

INSTALLATION DATA Type of Luminaire	Semi-Indirect Incondescent	Plastic Botton
No. of Rows	3	2
Luminaires per row	4	7
Lamps per luminaire	1	4
No. of lamps	12	56
Watts per Luminaire	500	195
TOTAL WATTS	6000	2730
MAINTAINED FOOTCANDLES	50	50

CALCULATION OF COMPLETE EXPENSE

CAPITAL EXPENSE		
No. of Luminaires	12	14
Estimated cost each installed	\$ 25.32	\$ 50.50
Total cost luminaires	303.84	707.00
Estimated wiring per luminaire	16.00	11.00
Total cost wiring	192.00	154.00
Total (luminaires plus wiring)	495.84	861.00
Assumed years life	10	10
TOTAL CAPITAL EXPENSE PER YEAR	\$ 49.58	\$ 86.10
ENERGY EXPENSE		
Total Watts	6000	2730

Total Watts	6000	2730
Average Hours Used per Year	2000	2000
K.W.H. per year	12,000	5,460
Average Rate per K.W.H.	.025	.025
TOTAL ENERGY EXPENSE PER YEAR	\$300.00	\$136.5

OTAL ENERGI EXPENSE FER TEAR	\$300.00	\$130.30
LAMP RENEWAL EXPENSE		
No. of lamps	12	56
Avg. hours used per year	2000	2000
Total lamp hours per year	24,000	112,000
Rated lamp life in hours	1000	4000

Rated lamp life in hours	1000	4000
Avg. lamp renewals per year	24	28
Net price each	\$ 0.70	\$ 0.70
Replacement expense each (labor)	\$ 0.35	\$ 0.35
Net price plus repl. expense each	\$ 1.05	\$ 1.05
TOTAL LAMP RENEWAL EXPENSE PER YEAR	\$25.20	\$29.40
CLEANING EXPENSE		
No. of cleanings per year	4	4
	6 0.50	0 0 40

Cleaning cost per Luminaire	\$ 0.50	\$ 0.60
No. Luminaires	12	14
TOTAL CLEANING EXPENSE PER YEAR	\$ 24.00	\$ 33.40

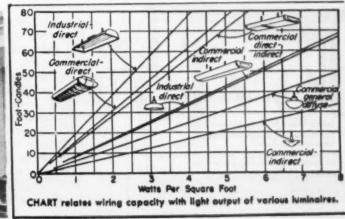
RECAPITULATION		
TOTAL CAPITAL EXPENSE PER YEAR	\$ 49.58	\$ 86.10
TOTAL ENERGY EXPENSE PER YEAR	\$300.00	\$136.50
TOTAL LAMP RENEWAL EXPENSE PER YEAR	\$ 25.20	\$ 29.40
TOTAL CLEANING EXPENSE PER YEAR	\$ 24.00	\$ 33.40
COMPLETE LIGHTING EXPENSE FOR YEAR	\$398.78	\$285.40

FOOTCANDLE PER YEAR

Example of direct-indirect lighting system.

(Please turn to page 172)

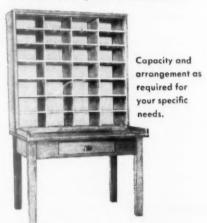






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Costs Of Office Lighting

(Continued from page 171) form illumination of high quality on the working areas.

While it is obvious that light is needed for seeing, the amount required for a given task is extremely important to insure rapid, effortless seeing. Furthermore, any lighting that is planned for offices must conform with certain fundamentals which will contribute to eye-comfort. These fundamentals are chiefly quantity and environment quality of

illumination.

Visual acuity, a basic factor in the speed of reading, increases materially as lighting intensities go up. Furthermore, eye sensitivity to contrasts is also greatly magnified with illumination increases. Mr. Zahour notes that the effect of higher footcandles on nervous muscular tension, frequency of blinking and convergence reserve of ocular muscles all have an important bearing on fatigue.

Recommended values of illumination for various office tasks are shown in the accompanying chart prepared by IES.

Many Factors Affect Quality

There are many factors involved in lighting quality, such as brightness, brightness contrasts, light distribution and diffusion. Poor quality lighting is usually glaring, and creates undue eyestrain, nervous ailments and fatigue. High brightness or severe brightness contrasts in the field of view will reduce visibility and cause eve-discomfort. These conditions are classified as direct glare, reflected glare, and contrast glare.

Direct glare results from unshaded windows or by improperly shielded light sources in the field of vision. This condition can be improved by the use of shades, sliding curtains or adjustable valance louver-type blinds. In some instances, it may be necessary to orient tasks slightly in order to give workers a field of view more favorable to eye-comfort.

In most cases glare can be reduced and seeing improved by the Mr. following methods, states: (1) Decreasing brightness of light sources and lighting equipment; (2) diminishing the area of high brightness causing glare; (3) increasing the angle between glare source and normal line of sight: (4) brightening surrounding areas against which the glare source is

Reflected glare is caused by the reflection of bright light sources from polished surfaces. Where luminaires are involved, proper shielding or low brightness diffusing media should be employed to soften the contrast of reflected glare. A good method to eliminate surface glare reflections is to cover shiny desk tops with light, diffuse linoleum. Typewriters and calculating machines are easier to work at if finished with dull or nonglossy paints.

Contrast glare results when the brightness ratio of various surfaces within the field of vision are extremely high. For eye-comfort the brightness ratio of the work to desk top should not exceed three to

Eye-comfort is also influenced by the reflectance of the ceiling and side walls, and finishes of office furniture. Light colored matte finishes for all surfaces help to achieve desired brightness ratios and also eliminate annoying reflections. In large areas, light colored room surfaces serve as secondary light sources, and provide a better utilization of light. High ceiling reflectances are usually favorable factors in determining brightness ratios between luminaires and surroundings

In discussing the five different types of artificial lighting, Mr. Zahour offers the following general guide for evaluating selections:

- 1. Function of equipment it should provide basic lighting requirements for comfortable office seeing.
- 2. Appearance of equipment-the size, shape, color and texture, together with components, should harmonize with the architectural features of the office.
- 3. Overall cost—the initial installation cost plus the cost of operation and maintenance should be commensurate with the returns realized from eyesight conservation and efficient office operation.

Direct lighting systems are those which distribute practically all of the light downward with a minimum on side walls or ceilings, and are recommended for low ceiling areas of 11 feet or less. To minimize contrast brightness ratios between luminaires and ceiling, room and furniture reflectances should be high so as to return some of the downward light upward.

Semi-direct systems emit 60 to 90% of the light downward on the

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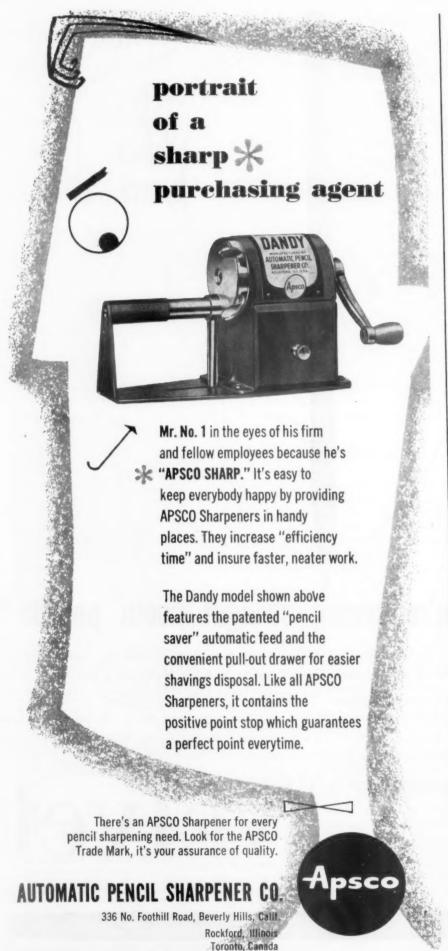
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(Continued from page 172) working areas, while the 10 to 40% upward component illuminates the ceiling area. This improves the brightness ratio between luminaires and surroundings.

General diffuse or direct-indirect systems provide up and downward components of light which are about equal in all directions, while another design of direct-indirect character emits less light sideways at angles near the horizontal. From the standpoint of difficulty with shadows, direct and reflected glare, the latter scheme is more suitable.

Semi-indirect systems distribute 60 to 90% of the light output upward toward the upper side walls and ceiling, and the balance in a downward direction. Since light that reaches the upper side walls and ceiling is reflected into the room. these surfaces should be a matte finish of high reflectance. Semi-indirect luminaires are characterized by low brightness luminous surfaces which help to achieve the desirable ratio of ceiling to unit so favorable to eve-comfort.

Indirect lighting systems emit 90 to 100% of the light upward to the ceiling and side wall areas from which it is redirected down into the room. Since the ceiling and upper side walls function as secondary light sources, these surfaces should be a matte color of high reflectance. While the efficiency of indirect lighting is not as high as the other systems, the diffuse quality, however, provides illumination of minimum brightness and glare.

Cost Factors To Be Considered

Although both incandescent filament and fluorescent lighting systems will permit optimum office efficiency and eve-comfort for workers, certain cost factors should be considered in making a choice of either system. If office areas are to be lighted with levels recommended for eye-comfort and rapid, effortless seeing, then luminaire equipment should be selected which, over a period of time, will be most economical. Also, where recommended intensities are maintained uniformly throughout the daily working period, the matter of radiated heat from the lighting system becomes an important factor in body comfort, especially during warm humid seasons.

There are two outstanding characteristics between the two types of lamps which are especially note-

(Please turn to page 176)

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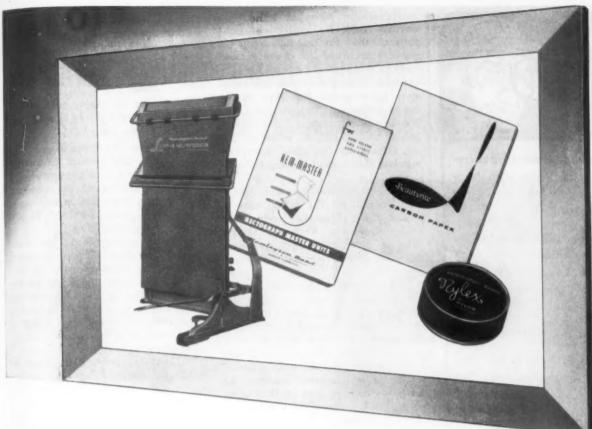
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(Continued from page 174) worthy: first, for equivalent light output, the fluorescent lamp is more economical to operate; and second, for equivalent wattage, the fluorescent lamp produces 21/2 times more light output. However, unlike the incandescent filament lamp, the fluorescent lamp requires a starter and a ballast coil to establish the arc stream in the glass tube and regulate the current flowing through

From an installation and equipment viewpoint, the initial cost of incandescent filament systems is lower. However, from the standpoint of operating cost economy, the fluorescent system is more favorable.

Limited wiring is another important factor to consider, especially when relighting an area where the existing system provides insufficient illumination for the type of work performed. For example, to obtain a 50-foot candle level with a semiindirect incandescent system, 8.2 watts per square foot of floor area should be considered as a guide for adequate wiring. In comparison, however, for a semi-indirect fluorescent installation, only 3.6 watts per square foot are required.

Make Itemized Comparison

In order to correlate the many economic factors, an itemized comparison should be made of the various expense items for a fluorescent and an incandescent system of same classification that will produce a given lighting level. A complete Expense Analysis form for this purpose is that recommended in the ASA Code A23.1-1948.

The first part of the analysis covers the installation data, while the second section itemizes costs which make up the annual expense for initial installation, energy, lamp renewals and maintenance.

The accompanying typical expense analysis prepared by Mr. Zahour indicates that over a 10-year period of installation cost amortization, the annual cost of lighting will be \$7.97 per footcandle for the incandescent system, and \$5.70 per footcandle for the fluorescent method. Noteworthy, too, are the comparisons between initial installation costs and operating expenses for the two methods. While the installation cost for the fluorescent system is higher, the energy expense is considerably lower.

To obtain optimum performance from any lighting system, a regular

planned schedule of cleaning and maintenance should be established and executed. Light that is absorbed by accumulations of dust and dirt is paid for but never used at the seeing areas.

There are six major causes contributing to light losses in a lighting system. These are:

1. Loss due to lamps aging with use. While this normal characteristic of lamps is not preventable, it has been determined an economy. from lumen depreciation curves, to replace any lamp between 70 and 100% of its rated life.

2. Light losses due to low voltages. Wiring that will pass minimum code requirements may not be sufficiently adequate to carry the required voltage to the lamp sockets when the lighting circuit is loaded. Lamps burned below their designed voltage cause an appreciable reduc-

tion in light output.

3. Loss due to the efficiency of luminaire design. Lighting equipments are designed to control or modify the light radiated from a source. In this process, some light is absorbed by the luminaire reflecting surfaces. Photometric data. which reveals the actual distribution characteristics and overall efficiencies of luminaires, should not be misconstrued when selecting a system for a given application. For example, a semi-indirect system produces a more comfortable quality for office areas than a direct lighting system, yet photometrically, the latter is more efficient.

4. Loss caused by dust and dirt accumulations on the side walls, ceilings, floors, and office furniture. Dirt and dust lower reflection factors, thus dropping illumination be-

low the designed level.

5. Loss due to accumulation of dirt and dust on lighting equipment and lamps. In some cases, this loss can mount to 50% within a year. Also, by the very nature of their design, indirect or semi-indirect luminaires require cleaning at more frequent intervals than other types. Based on this knowledge, a regular cleaning schedule should be planned that will insure efficient lighting performance through the

As part of this maintenance schedule, lamps marked with a date of installation may be checked for age, and if found near the end of life, they should be replaced before they burn out and create light loss due to outages.

(Please turn to page 178)

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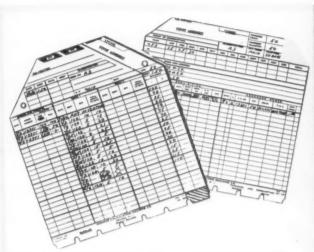
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TWO-CARD STOCK CONTROL ELIMINATES REQUISITION WRITING SAVES TIME-MONEY IN PURCHASING AND STOCK DEPARTMENTS





New approaches to old stock control problems have permitted reductions in time, effort and expense that were beyond the realm of possibility just a few short years ago. With the development of the two-card stock control method, it became apparent that better usage records ever longer periods of time could be kept if the usage or history portion of the record was separated from the stock card. Using tray and cabinet type visible systems for housing the records, it represented a great step forward.

But even with this progress, certain shortcomings still prevented management from enjoying the full benefits of the two-or-more card system. For the next step, that of eliminating the writing of requisitions could not be effectively accomplished with ordinary flat tray housing equipment. Requisitions out of file were poorly controlled, and requisitions were difficult to remove and replace with proper speed and accuracy. Signalling became inaccurate; the system was difficult to survey and control.

Today, VISIrecord solves all of these problems. The experiences of such firms as John A. Roebling's Sons, Durez Plastics and Chemicals, Inc., Reynolds Wire, Chevrolet Tonawanda, Bell Aircraft, and many others, make up a remarkable story of acomplishment.

The system is simple both in approach

and operation. The master VISIrecord stock card is basically the same as in previous systems. It controls receipts, disbursements, stocks on hand, reservations and available working balances, as required.

The permanent requisition copy, the most valuable record to purchasing of all individual records, is VISIrecord's second card. It contains vendor information, usage history, requisition, authorizations, purchasing and receival data. (For control purposes, both cards contain the present maximum and minimum stock requirement figures, material description, location, etc.)

The second card is a complete purchase history record, and can replace the purchase history record, maintained by the purchasing department. Date and quantity are the only postings necessary on the automatic requisition, thus saving time of requisition writing and eliminating transcription errors in writing specifications. This second card gives a complete accurate review of requisitions for the approval of management without the necessity of referring to the master stock cards. (A third record for back ordering purposes can also be added to serve as a ready reference for requests to be filled when stock is replenished.)

Requisition control is acomplished by a round hole in the master card, co-

crdinated with a color spot on the requisition copy. When the requisition is filed behind the stock record, the color spot appears. When it is out of file and routed to purchasing, this fact it signalled to the operator by the missing color block.

Visibility, then, is the keynote—visible records with visible control. As many as 12,000 records per hour can be checked visually. In a matter of minutes, an operator can spot requisitions that are out, review minimum balance figures and review for slow-moving or obsolete stock.

Compactness is another great advantage, for VISIrecord concentrates records around a single operator, needs little floor space. Every record is within easy reach. Posting is done at desk-top level, and both material and work area are arranged so that work never has to be moved between posting operations. No time is lost by unnecessary operator movement; errors through fatigue are reduced. Additional record sets can be added and housed with complete control, as needed.

For further information on Stock Control, and for a free survey of existing operations with no obligation, write to VISIrecord, Inc., Dept. P, Copiague, Long Island, N. Y., or in Canada, VISIrecord of Canada, Ltd., 266 King Street, West Toronto 1, Ontario.



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TO SELECT OR REPLACE ... HERE'S ALL YOU DO

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(Continued from page 176)

6. A realistic consideration of these various factors is essential to the efficient operation of the office lighting system. The cost of even frequent maintenance is more than offset by the value of the additional illumination obtained.

The following guide may be of assistance in considering factors involved in the selection of fixtures:

- A. Optical. Electric Testing Laboratory report covering:
 - 1. Quantity of light: Coefficient of utilization.
 - 2. Quality of light.
 - a. Brightness
 - b. Shielded (angle)
 - c. Distribution
- B. Mechanical.
 - 1. Finish
 - 2. Construction
 - 3. Quality of glass or plastic
 - 4. Provisions for maintenance
 - a. Lamp changing
 - b. Washing
 - c. Ballast and electrical repairs
 - 5. Provisions for installation
- C. Electrical
 - 1. Starters
 - 2. Lamp holders
 - 3. Ballast
 - a. Noise
 - b. Electrical characteristics

New Crest Line Catalog Describes Equipment

A new booklet describing Crest Line desks, tables and companion pieces, has been published by Security Steel Equipment Corporation, Avenel, N. J. Full descriptions and pictures of Crest Line products are shown in the booklet, known as Catalog 153. Included in the booklet are flat-top desks, secretarial and typewriter desks, fixed bed desks, machine desks, tables and companion pieces such as telephone stands, bookcases, executive files and waste baskets.

New Electric Typewriter Introduced By Underwood

A new Underwood Finger-Flite electric typewriter, available in five models and designed for functional efficiency, has been announced by the Underwood Corporation, New York City. This machine, finished in soft gray with harmonizing dark blue base and control keys, has a new Finger-Flite keyboard. The keytops, especially created for speed and finger comfort, are light gray. Color controlled function keys in dark blue such as the electric margin and repeat forward spacer, give instant color control between the operating and feature keys.

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Other improvements include a wider writing line margin from 10 inches on the Model 12 to 25 inches on the Model 26; a new carriage position scale which is helpful in centering headings; a three-position paper bail; a new push-in type variable line spacer and a new impression control dial to select automatically the proper key impact for any desirable number of carbon

Junior Slitter Attachment Fits Most Tape Dispensers



Junior Slitter, a new and revolutionary type of tape slitter attachment that can be used on any 3" core cellophane or acetate fibre tape dispenser, is being made by Penn Tape Savers, Philadelphia, Pa. It makes one slit, slitting 1" wide tape in 1/2" widths, saving 25% to 30% in tape cost. Made of durable plastic, 5" long, it snaps on dispensers easily. It contains three holes, so spaced that it can be used on any style tape dispenser. Operators' fingers are protected from the knife, which is imbedded in plastic. Another model slits 34" tape into 3/8" widths.

Microfilm Franchise Offered By Diebold To Dealers

Diebold, Inc., Canton, Ohio, is now establishing dealer sales outlets for its new portable Flofilm camera and reader, giving dealers the opportunity of a microfilm franchise. Office equipment dealers are offered portable microfilming equipment that is fast, compact and inexpensive enough for use in daily office routines. The new Flofilm camera weighs only 20 pounds and yet has the features of larger and much more expensive cameras. Heading the list of exclusive features is the error-free film magazine that eliminates any possibility of film damage. Film processing is handled directly by any of Diebold's processing stations, again eliminating service problems.



can be incorporated in single, multiple part, flat pack or roll forms. Colitho Business Systems provide for variables and blackouts, deletions or additions. Partial information can be added at any time. All business paper work lends itself to simplification through a Colitho System.*

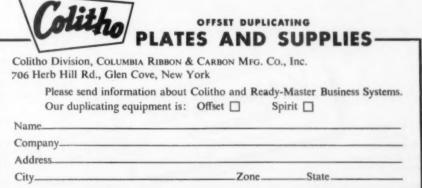
Regardless of the kind of business you are in, Colitho Systems offer time and money savings in purchasing, manufacturing, distributing, selling, billing and accounting. For more information, mail the coupon attached to your business letterhead.

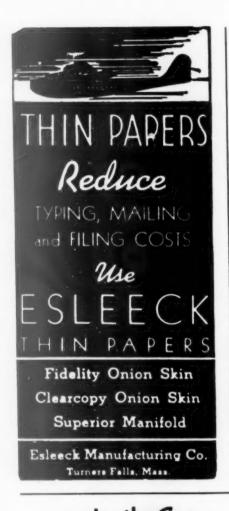
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Folder Tells Advantages Of Remington Rand Adding Machines

The accuracy, capacity, economy and speed of their hand operated adding machines is the subject of a new four page folder released by Remington Rand Inc., New York City. The folder describes a variety of machines all available for various office figuring jobs such as stock count, sales totals, monthly billing and budget figuring. Every machine features the simplified 10-key keyboard that permits fast and easy touch method of operation.

Clary Introduces New Machine To Retail For \$135

The first radically new hand adding-subtracting machine introduced in years is announced by the Clary Multiplier Corporation, San Gabriel, Calif., with the production of its initial hand-operated model to be marketed at a low retail price beginning at \$135. The new machine adds, subtracts and multiplies, and is a full-size, heavy-duty model weighing only 16 pounds. It also features the exclusive "rapid handle"

return" which increases work speed, and the forward stroke is smoothly controlled against operator abuse.

New "Quaker Line" of Files Now Offered By Peerless

Peerless Steel Equipment Company, Philadelphia, Pa., is now offering low priced line of progressive suspension files in letter and legal widths known as the "Quaker Line." They are designed to meet the demand for low-cost cabinets having sturdy construction and maximum filing capacity. A four page brochure giving illustrations, full descriptions and sizes may be obtained on request of the company at 6801 Rising Sun Avenue. Philadelphia.

Ditto Names Homer B. Smith Sales Education Director

Homer B. Smith has been appointed sales education director of Ditto, Incorporated, Chicago, Ill. In this newly created position, Mr. Smith will be responsible for the preparation of sales education material for Ditto's own sales force, for the various Ditto dealers throughout the country, and for the vast school field.



Correcting Mistakes In Any Language with Weldon Roberts Erasers has long been a tradition with Englishmen the wor'd-over. Eraser users everywhere are just as smart when it comes to knowing Weldon Roberts world's-best eraser values in quality, uniformity and dependability!

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AMONG THE ASSOCIATIONS



Cleveland Association Elects Officers; Gombert Named President For 1953-54

W. E. Gombert, purchasing agent for Addressograph-Multigraph Corporation, has been elected president of the Purchasing Agents' Association of Cleveland.

Other new officers, who will be installed this month, are August J. Mitchell, manager of purchasing of the Swartwout Company, first vice president; Robert S. Minning, Consolidated Iron-Steel Mfg. Company, second vice president; Clarence E. Carlson, Mitchell Metal Products, Inc., secretary-treasurer. W. Dale Kimmell of Standard Products Company, retiring president, was elected national director.

Newly elected members to the board of trustees for two-year terms are Charles Conley, Standard Oil Company; L. W. Curren, Van Dorn Iron Works; and Joseph Hickernell, Harris-Seybold Company. Other members of the board are A. O. Anderson, Aluminum Company of America, reelected; and William R. Toward, Lincoln Electric Company. "Selection and Appraisal of



New officers of the Purchasing Agents' Association of Cleveland are, seated left to right: Robert S. Minning, second vice president; August J. Mitchell, first vice president; W. E. Gombert, president; Clarence E. Carlson, secretary-treasurer. Standing, Charles Conley, A. O. Anderson, Lawrence W. Curren and Joseph Hickernell, board members.

Sources of Supply," was the topic discussed at a forum meeting April 16 at the Allerton Hotel. Panel members were J. Donald Hogg, Harold C. Shade and C. D. Jones.

J. C. Hoover Elected President Of Rochester Association

J. C. Hoover, of the Burke Steel Company, was elected president of the Purchasing Agents Association of Rochester at the April 22 meeting in the Sheraton Hotel. Other new officers include G. J. Andres, Fasco Industries, first vice president; R. C. Ade, Wm. J. Meyer Company, second vice president; W. T. Naylor, General Railway Signal Company, third vice president; W. B. Wight, Bausch & Lomb Optical Company, secretary-treasurer.

Directors include W. F. Sauers, Ritter Company, Inc.; W. F. Mylaraine, Hickok Mfg. Company; M. P. Avery, Bell Howell Corporation; W. J. Hoot, Genessee Brewing Company, and W. Almond, Doehler-Jarvis Division.

The speaker for the evening was Paul L. Martin, chief of the Washington news bureau of Gannett News Service, who talked on "Where Do We Go From Here."



Panel members at the annual meeting of the Purchasing Agents Association of Eastern New York were, left to right: Frank E. Plumley, newly elected vice president; R. M. Kimball of The Foxboro Company, Foxboro, Mass.; and George L. Brown of F. C. Huyck & Sons, Inc., Kenwood Mills, formerly eighth district vice president of N.A.P.A. (See story and other photo on page 186.)



PROTECTION

Against Downtime . . .

THANKS TO BATTERY POWER!

Battery power is the most dependable industrial truck power available today! With a minimum of moving parts, battery trucks work longer, last longer, chalk up in-service records no other type of truck can approach. Such dependability . . . such freedom from downtime . . . means maximum materials handling economy. Protect yourself against expensive downtime with Gould-battery-powered industrial trucks.



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Importance of Purchasing, Standardization Stressed at Akron Association Meetings

The importance of industrial purchasing in today's economy and standardization in purchasing were the topics of recent addresses given before the Akron Association of Purchasing Agents.

At the annual Executive Night meeting in the Women's City Club. E. A. Stevens, treasurer of the B. F. Goodrich Company, discussed industrial purchasing's importance. Mr. Stevens has served in various purchasing positions during past years. More than 120 members and guests attended the meeting.

At the April meeting Vincent DePaul Goubeau, vice president and director of Materials, R.C.A. Victor Division of Radio Corporation of America, presented an informative discussion on standardization. Mr. Goubeau joined R.C.A. Victor in 1945 as general purchasing agent and was elected to his present position in March, 1949. He is past president of the New England Purchasing Agent's Association.

Guests at the meeting include E. L. Clayton, director of purchases for the Philip Carey Manufacturing Company, Cincinnati, and chairman of the standardization committee of the Sixth District, N.A.P.A.: Theodore Thompson, Dayton, vice chairman of the educational committee, Sixth District; Robert Crane, Canton; J. D. Hogg, Cleveland; H. A. Bruce, Mansfield, Cliff Egan, Youngstown, all of whom



Seen at the annual Executive Night dinner of the Akron Association of Purchasing Agents were, left to right: H. L. Wright, president, Falls Engineering & Machine Company; J. F. Vanni, purchasing agent, M. O'Neil Company; J. L. Feudner, general superintendent, M. O'Neil Company and L. L. Kinsey, comptroller, M. O'Neil Company.

are chairmen of standardization committees in their respective associations.

William R. Lantz, vice president and director of purchases of The Sun Rubber Company, and national director of the Akron Association, has been elected Sixth District vice president. Prior to joining the Sun Rubber Company, Mr. Lantz was with B. F. Goodrich Company for 17 years, eight of which he served in purchasing positions. He is a past president of the Akron Association and has served on the national educational committee.

Wallace B. Stanford Honored By Southwestern Group

Wallace B. Stanford, Phelps Dodge Copper Products Company, received the 1953 Merit Award of the Southwestern Purchasing Agents at the 13th annual awards dinner of the Los Angeles Purchasing Agents Association. Virgil Waters, past president and chairman of the awards committee, made the presentation of a gold wrist watch "as a token of justly earned and well merited award."

Sir Robert Hadow, British consul general, was the guest speaker at the meeting.



At Akron Executive Night, seated, left to right; D. Alexander, PA, Ohio Bross Company; E. A. Stevens, treasurer, B. F. Goodrich Company; E. G. Hammack, manager of purchasing division, Goodrich. Standing: L. Bishop, PA, Bridgewater Machine; W. Lantz, VP and PA, Sun Rubber Company, and George Porter, president, Porter Heat Treating Company.



W. E. Miller, director of purchasing, Enterprise Mfg. Company; C. F. Tate, PA, Akron Porcelain Company; Tom McLain, R. C. Musson Rubber Company, and C. D. Wheeler, PA, R. C. Musson Rubber Company, were at the Akron Executive Night dinner. The importance of industrial purchasing in today's economy was stressed at the meeting.

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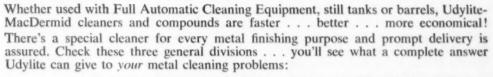
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CLEANING SUPPLIES WORK FASTER, BETTER, MORE ECONOMICALLY!

Typical Full Automatic Cleaning Installation at Metal Mouldings Corp., Detroit, Michigan

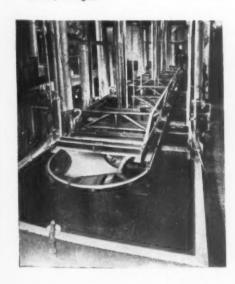


Steel Base—All cleaners in this general group are either electrolytic, soak, spray or general purpose types of compounds. They are especially adapted for cleaning steel base materials, either with direct or reverse current.

Brass and Die Castings —Cleaners in this group are composed of electrolytic, soak, spray and burnishing types of compounds. They are ideal for brass, zinc, and aluminum diecastings, since they will not discolor base metals.

Specialties—Compounds in this group fit a wide range of special metal cleaning problems. Write for full information on metal cleaners.

The Udylite Corporation carries a complete line of MacDermid cleaning compounds. For the answer to your needs, call your Udylite Technical Man. He can help select equipment and cleaners which give you an economical, FAST answer. Or, if you prefer, write direct. The Udylite Corporation, Detroit 11, Michigan. West of Rockies, L. H. Butcher Company, Los Angeles, California.



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PIONEER OF A BETTER WAY IN PLATING





Kenneth B. Gordinier of the American Meter Company, left, newly elected president of the Purchasing Agents' Association of Eastern New York, receives the gavel of office from Theodore TenEyck of the Watervliet Tool Company, retiring president.

Eastern N. Y. Association Seats New Officers At Annual Meeting

Newly elected officers of the Purchasing Agents' Association of Eastern New York were introduced at the annual meeting held at Wolferts Roost Country Club.

A panel discussion covering pur-

chasing policies and methods manuals was conducted. Panel members included Frank E. Plumley, newly elected vice president and past education committee chairman; R. M. Kimball of The Foxboro Company, Foxboro, Mass., guest speaker; and George L. Brown, formerly Eighth District vice president of N.A.P.A.

Connecticut Association Hears Two Speakers From G-E

An educational forum, featuring an address by H. H. Watson, commercial engineer for the Construction Materials Division of General Electric Company, and the showing of a new G-E documentary film, "Freedom and Power," highlighted a recent meeting of the Purchasing Agents' Association of Connecticut in the Stratfield Hotel, Bridg port. L. D. Miles, manager, value analysis unit of the Materials Service Department of G-E, also spoke.

Middle East Speaker Heard At Chicago's Annual Meeting

Louis J. Alber, author and foreign correspondent, spoke on "The Explosive Middle East," at the May 14 meeting of the Purchasing Agents' Association of Chicago in the Hotel Sherman.

Officers for the coming year were scheduled to be elected at this annual meeting. Committee reports were presented and a brief review of the association's activities was given.

Two Chicago members have been appointed to N.A.P.A. committees. Ray L. Hamilton, Alpha Portland Cement Company, has been appointed Regional Chairman, N.A.P.A. Coal Committee, and Roy H. Harris, American Colloid Company, has been appointed to serve on the N.A.P.A. Container Committee.

Heavy Attendance Reported At Dayton Member-Product Exhibit

Attendance at the second annual Member-Product Exhibit of the Purchasing Agents Association of Dayton was 30% greater than last year and the number of companies represented with exhibitors was 20% above the previous show. The good response to the show indicated that the Association will continue it as a regular feature of its April meeting each year.

Willson H. Hunter, office of director of Lewis Flight Propulsion Advisory Laboratory, National Committee of Aeronautics, Cleveland, spoke at the April meeting. Mr. Hunter presented a detailed discussion on the background of invention, research and development leading to successful mancarrying supersonic airplanes. His talk was illustrated with five models of supersonic airplanes and also with other models of jet propelled non man-carrying aircraft. Mr. Hunter also showed a new 16 mm. color sound movie recently released, called "The Research Airplane."

Also shown at the meeting was the colored slide film "The Industrial Distributor," presented through the courtesy of Mill and Factory magazine.

Association members took part in a visit to the Cincinnati Milling and Grinding Machine Company plant in Cincinnati, on May 14.

The annual golf-picnic party has been scheduled for June 11 at the Walnut Grove Country Club.



Those who helped swell the attendance at the second annual Member-Product Exhibit of the Dayton Association of Purchasing Agents included, left to right: George Brockway, Howard T. Lewis, Robert T. Swanton, all past presidents of N.A.P.A., and Ted Thompson, Dayton Association program chairman.



Serious Business Discussions Highlight N. A. E. B. Convention

By William G. Hildebrand

FULL program of informative business sessions properly mixed with a few periods of fun and relaxation highlighted the 32nd annual convention of the National Association of Educational Buyers at Chicago's Edgewater Beach Hotel, May 6 to 8.

Attendance at the three-day meeting totaled 376 members, their wives and exhibitors, representing 204 institutions from all parts of the country. Although no official theme was set for the convention, it was obvious that the delegates were intent upon learning as much as they could about all aspects of the purchasing field. Meeting rooms were filled for all general business sessions and there was much spirited activity during question and answer periods that followed formal speech presentations.

The first session, the annual business officers' conference, got underway at 9:30 a.m., Wednesday, May 6. C. F. McElhinney, vice president and business manager, University of Houston, presided. E. W. Martin, treasurer of Hendrix College, spoke on "Are You Up-to-date With Your Insurance Coverage?" and J. L. McCaskill, director, division of legislation and federal relations, Na-



William L. Christensen, University of Utah, left, and R. E. Saye, Mississippi State College, speakers at Thursday evening general session.



NAEB officers for 1953-54 are, left to right: Melvin T. Tracht, Illinois Institute of Technology, vice president; D. R. Kimrey, University of Oklahoma, vice president; Kermit A. Jacobson, California Institute of Technology, retiring president; Forrest L. Abbott, Barnard College, president; John A. Pond, University of Colorado, treasurer; Bert C. Ahrens, exective secretary; and Henry L. Doten, University of Maine, vice president.

tional Education Association, discussed "The Washington Outlook." Harold W. Herman, editor, College and University Business, reported on observations on the census of college facilities made by the magazine.

Kermit A. Jacobson, NAEB president, welcomed delegates at a luncheon at Wednesday noon. Father Edward V. Cardinal, C.S.V., Sheil School of Religion, gave the invocation. A "Welcome To Chicago" was extended by Dr. Herold C. Hunt, general superintendent, Chicago Public Schools. Exhibitors at the convention were introduced by Henry B. Abbett, president, E. & I. Cooperative Service, Inc.

John A. Pond, treasurer of NAEB, presided at the first general session Wednesday afternoon, at which C. A. Rosenbrook, purchasing agent, Michigan State College, spoke on "Savings Through Salvage."

Mr. Rosenbrook broke salvage down into two classifications—disposal and maximum use. He explained the benefits derived from the use of a central salvage yard at Michigan State, pointing out that all salvage operations came under

the direction of the purchasing department.

Small items worth up to \$10.00 are sold through the salvage yard to employees of the college, and other items are disposed of as profitably as possible. As an example of the value of the system, Mr. Rosenbrook stated that in 18 months his office had sold \$13,551 of scrap mettal.

The salvage yard also has sold old buildings on a sealed bid basis. In one instance, it was necessary to dispose of an old barn located on farm property acquired by the school. It was sold for \$10.00 to local residents who removed it and cleaned up the property. The transaction saved the college \$590.00.

By maximum use, Mr. Rosen-brook explained that he meant putting to use equipment temporarily placed in storage. The biggest job is to locate the materials. This is done by placing a salvage man on the scene when a department relocates; by working closely with the inventory department; by personal calls by salvage men on department heads, seeking cooperation in releasing unused materials and



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unlimited design flexibility and low cost are some of the reasons why engineers in this industry, as in practically every field, specify OSTUCO Seamless or Electric Welded Steel Tubing. They know they can count on OSTUCO for consistent highest quality, and they like the convenience of OSTUCO'S Single Source Service, made possible by manufacturing, forging and fabricating all at one plant.

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Gaily decked out in straw hats and colorful bandannas this group prepares to enter banquet hall for Wednesday night's Warm-Up Party.



Closing banquet found this group enjoying each other's company. Left to right: E. H. Brill, Rutgers; Henry K. Nelson, Columbia; Emil H. Eisenhardt, New York University; Elsie Grenz, College and Business Magazine; Jeff Coleman, University of Alabama; Victor Nowak, Teacher's College, Columbia, and D. Francis Finn, Brown.

equipment; and by circulating lists of available materials regularly to all departments, to let department heads know they can benefit by releasing unused material.

Following Mr. Rosenbrook's talk and an active floor discussion on salvage, Bert Ahrens, executive secretary of NAEB, conducted a "Commodity Problems Question Box," based on questions mailed to him by members in the weeks preceding the convention.

This session included a survey of the duties of purchasing agents, such as whether they supervise the telephone, mimeograph and mail departments; discussions on methods of refinishing furniture and members' experiences with various types of office machines.

Elmer Jagow, general chairman of the Chicago host committee, presided at the Warm-Up Party Wednesday evening, at which everyone was given a straw hat and brightly-colored bandanna to wear. Jerome A. Gottschalk, assistant to the president, Herbrand Division, Bingham-Herbrand Corporation, gave a semi-humorous talk on "How To Fail As A Purchasing Agent."

Following the Warm-Up Party, the E & I Co-op Hospitality Room was opened.

At the Thursday morning general session Carl M. F. Peterson, superintendent of buildings and power, Massachusetts Institute of Technology, discussed "Factors Influencing Construction Costs." Forrest L. Abbott, vice president of NAEB, presided.

In an interesting presentation of "A Salesman Speaks To Professional Purchasing," F. Glenn Rink, eastern sales manager of Scott Paper Company, urged that purchasing agents be taught to improve themselves in their work much the same as salesmen are taught to improve their sales techniques.



John A. Pond, NAEB treasurer, opens general session Wednesday afternoon.

Too many purchasing agents overlook their own importance as management representatives and fail to assume the part of management in their work—neglecting to think and speak as management.

Mr. Rink's advice to purchasing agents to become successful included the following:

Think positively about everything to become an important part of management.

Don't gripe.

School yourself. Work methodically on each job to be done and do it as it comes due.

When purchase of a new product must be made, learn all you can about it from vendors before buying it. Don't follow the easy course of buying the first thing made available to you.

Don't become a specialist, if you want to become a broad part of management.

Don't be an isolationist.

Don't be a mouse. Don't fear anything—especially not fear itself. "Mice don't get promoted. The bold may make many mistakes, but they do produce."

Be a trainer. Help others working with and for you to share your knowledge. Through this you will also learn.

Develop a genuine sense of giving. Here are some of the free gifts you can give to others:

Gift of attention. Flitting, fleeting, half-hearted tolerance is non-productive and insulting.

Gift of good nature. This includes pleasantness and smiles which are "100% tax free."

Gift of service to fellow workers and vendors.

Gift of confidence in vendors.

Gift of gratitude. A warm, simple thank you by a phone call or letter cost nothing.

Gift of concession. This is sometimes hard to give but is especially valued when received. Admit errors with a smile.

Gift of courtesy. The most common gift a purchasing agent can give.

The invocation at the Thursday luncheon was given by Dr. Harold Bosley, First Methodist Church, Evanston, Ill. Gerald D. Henderson, business manager, Vanderbilt University, presided. Harry L. Wells, vice president, Northwestern University, spoke on "Higher Educa-

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Kemit A. Jacobson, NAEB president, welcomes delegates at opening luncheon, May 6.



F. Glenn Rink, Scott Paper Company, standing, speaker at Thursday morning session, and Carl Peterson, MIT, chairman of session.

tion is Serious Business."

On Thursday afternoon delegates went on several tours of points of interest in and around Chicago. These tours included Northwestern University and the North Shore; University of Chicago and Museum of Science and Industry; Merchandise Mart and N.B.C. radio and television studios and Tribune Tower, home of the Chicago Tribune and WGN radio and television studios.

There were three workshop sessions Thursday evening. At one, Roy Ruehle, director of dining service, Capital University, Columbus, Ohio, spoke on "Balancing the Food Budget." The second session was divided into two parts. First was a discussion of "The College Housing Loan Program," by George F. Baughman, business manager, University of Florida. Consultants were Jay du Von, College Housing section, Housing and Home Finance Agency, and George C. Decker, chief, College Housing Loan Pro-

gram, U. S. Office of Education. The second part of the session featured a "Discussion of Volume I, College and University Business Administration," by Granville K. Thompson, specialist for College Business Management, U. S. Office of Education.

The third session also was split in two parts, the first featuring a discussion of "Purchasing Forms and Procedures," by William L. Christensen, assistant purchasing agent, University of Utah. In his presentation Mr. Christensen showed colored slide views of various purchasing forms used by universities and traced the course of various purchasing procedures now in use.

The second part of the session included a discussion of "Problems Relating to Training Units of the Armed Services and Relief For The Military Property Custodian," by R. E. Saye, purchasing agent, Mississippi State College.

The annual meeting of group

and regional leaders was held at 8:30 a.m. Friday, presided over by Jamie R. Anthony, controller, Georgia Institute of Technology, for D. R. Kimrey, vice president in charge of regional groups.

Vice president Henry L. Doten presided over the Friday morning general session which included a talk on "What an Institutional Purchasing Agent Should Know About Textiles, Laundry Installation and Operation," by L. A. Bradley, manager State Univ. of Iowa laundry.

Following this James J. Ritterskamp, director of purchasing, Washington University, presented a speech on "What a Purchasing Agent Should Know About Paper and Printing," featuring samples of various kinds of paper and demonstrations of equipment.

Mr. Ritterskamp pointed out how he cut the cost of printing his university's directory by 40% through the replacement of set type

(Please turn to page 196)



Happy group at annual banquet included, left to right: Bill Price, E & I Ca-op; E. G. Donovan, Remington Rand; Millie Zachary, Father John J. Reddington, S.J., and Paula Popke, all of Notre Dame, Brother James Kenny, S.J., Fordham; Father Leo Sullivan, S.J., Holy Cross, and J. B. Zellers, Remington Rand.



Pleasant conversation is enjoyed at E & I Co-op Hospitality Room by, left to right, Bert Ahrens, Frederick J. Kolb, Rochester Institute of Technology; George W. Schwab, Louisiana State University, and Mr. and Mrs. Clarence A. Smith, University of Minnesota.



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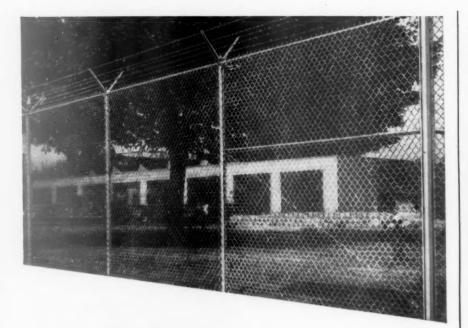
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Plants in: Baltimore, Maryland; Houston, Texas; and Los Angeles, California Branches and warehouses in all principal cities. with typewriting which was reduced to book size and reproduced by photo-offset. He explained in detail the various types, sizes and weights of papers, the three main printing processes and methods of binding.



C. A. Rosenbrook, purchasing agent, Michigan State College, spoke on "Saving Through Salvage" at the Wednesday afternoon session.

He explained how to prepare specification sheets for a print order and offered the following advice on how to save money on printing jobs:

Avoid changes.

Combine similar jobs to attain greater volume at a given time.

Provide your own paper to printer to avoid handling charges.

Sub-contract large printing jobs. Savings of 10 to 15% on yearbook printing costs can be realized by personally handling contracts with the engraver, linotyper, printer and bindery.

Following Mr. Ritterskamp's talk, Bert Ahrens conducted a session to give members a chance to "Get It Off Your Chest." This included a wide variety of questions and answers on many subjects.

The annual business session was held Friday afternoon. The president, treasurer and committees made their reports at this time. Educational and Institutional Cooperative Service, Inc., also had its reports at this time.

A social hour was held from 6 to 7 p.m., and was followed by the annual banquet. A. C. McGiffert, Jr., president, Chicago Theological Seminary, gave the invocation.

Retiring president Kermit A. Jacobson, purchasing agent of California Institute of Technology, installed the officers for 1953-54. They are: President, Forrest L. Abbott, controller and business (Please turn to page 200)



Regardless of the materials or products you handle, there's a Thermoid Conveyor Belt that will stay on the job longer... reduce down time.

The complete Thermoid line includes both standard belts for handling a wide variety of materials, and special types to meet specific requirements. Thermoid's special impregnation process welds carcass and cover into an

exceptionally strong, durable belt.

Your Thermoid Distributor can select the belt best suited to your needs. If your problem is unusual, he'll call an experienced Thermoid Sales Engineer.

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Imparts no odor.

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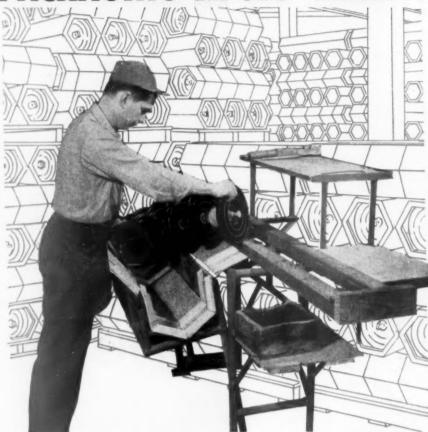
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Packaging six porcelain insulators in a bulky nailed crate was a time-consuming two-man operation at Victor Insulators, Inc., Victor, New York. Introduction of the sturdy, lightweight General Wirebound Box and the jig-assembly system shown here enabled Victor engineers to reduce packaging to a quick, efficient, one-man operation, cut packaging costs by an estimated 25%. And their customers benefited by the substantial saving in on-site uncrating time-now a matter of seconds, thanks to General Wirebound Design.

This is only one example of hundreds of packaging problems solved each year—at a saving—in General Box Company's two fine Industrial Packaging Laboratories. General packaging experts stand ready to help you cut costs, too. Write today for complete details.

Find out how other manufacturers are cutting packaging costs. Write for your free copy of "The General Box.



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(Continued from page 196)

manager of Barnard College; vice presidents, Henry L. Doten, business manager, University of Maine; D. R. Kimrey, director of purchasing, University of Oklahoma; Melvin T. Tracht, Illinois Institute of Technology: treasurer, John A. Pond, director of purchasing, University of Colorado.



Bert C. Ahrens, executive secretary of NAEB, conducting "Commodity Problems **Question Box.**

Featured speaker at the banquet was Fred A. Seaton, publisher of "The Hastings Daily Tribune," who spoke on "Behind The Scenes In '52," a report on the strategy that went into President Eisenhower's campaign for election.

The Huntington, Pasadena, Calif., was announced as the site of the 1954 convention.

Connecticut Gets New Members

New members of the Purchasing Agents' Association of Connecticut include William C. Gleason, The Tubular Products Company, New Britain; William J. Egan, Mattatuck Mfg. Company, Waterbury, and Ernest J. Kwantz, The Dictaphone Corporation, Bridgeport.

Detroit Association Announces Dates For 1953 Golf Parties

The Purchasing Agents' Association of Detroit has announced its 1953 golf dates, which include May Tam 19. Gownie; June 23. O'Shanter; July 7, Plum Hollow; August 11, to be announced; September 15, Grosse Ile, and October 6, Western.

Vince Zobel is again in charge of the golf committee's arrangements, assisted by Jack Alschbach, Gene Grenon, Oren Perlin and George Kessel.









Why a top P.A. sees 4 sides to every question

BEFORE a top purchasing agent decides which make of component parts he'll buy, he looks at the matter from a number of angles.

He investigates the materials and skills that go into the making; the scope of the engineering services available to him; the reputation of the maker; the price he will pay.

While he may not actually put his thinking into a formula, here's the 4-sided mental process he follows:

Applying this formula to various makes of tapered roller bearings, he's almost bound to specify Timken® bearings in the end. For Timken bearings are generally acknowledged to lead the industry in quality, engineering service and public acceptance-by margins quite wide enough to overcome any minute difference in price. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

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Safety and Plant Engineers—here's how you voted: In a national survey recently completed, 100% of your replies stressed ease of operation as a major factor in Extinguisher selection. And on the basis of being "easiest to use", 86% of your replies specified Randolph over the nearest brand—66% specified Randolph over three other leading brands, combined!

With no nozzles to adjust, no valves to turn, Randolph Extinguishers are 100% panic-proof. Just snap from the bracket, aim and press the trigger. You KNOW how to use this extinguisher just by looking at it!

COMPLETE LINE OF EXTINGUISHERS AND AUTOMATIC EXTINGUISHING SYSTEMS

Make sure your plant is rabbilized for fire... with easy to use, simplified RANDOLPH Equipment. Sizes from 2½ to 50 lbs. Manual and automatic systems. Write Randolph Laboratories, Inc., 1 E. Kinzie St., Chicago 11, Illinois.



Rhode Island Association Hears Dr. Joseph Zimmerman

Dr. Joseph Zimmerman, editorin-chief of the Daily Metal Reporter, was the featured speaker at the April 27 meeting of the Rhode Island Purchasing Agents' Association, in the Narragansett Hotel, Providence.

On May 12 association members visited the Wyman-Gordon Company plant in Worcester, Mass., and on May 18, held its annual meeting at the Wannamoisett Country Club.

Past Presidents Honored By St. Louis Association

Past presidents of the Purchasing Agents' Association of St. Louis were honored at the March meeting in the Hotel Sheraton. Featured speaker was H. W. Christensen, president of the National Association of Purchasing Agents, whose subject was "What Are We Actually."

A film entitled "Metallurgy Plus" was shown at the afternoon educational meeting. This was followed by an open discussion on 'Stainless Steel, Its Manufacture and Use," conducted by Stan Odar and Robbert C. Dalies.

Alf W. Pauley conducted a "know your members" commodities talk. On April 28 the association and

On April 28 the association and the University College of Washington University presented a "Forum For Purchasing Agents" designed to give purchasing agents an opportunity of adding to their professional stature by classroom study.

Discussions were conducted on "Interpreting Current Economic Trends" by Dr. H. E. Luedicke; "The Buyer's Liability Under Anti-Trust and Fair Trade Legislation" by Andrew J. Graham, and "The Federal Trade Commission" by Lowell B. Mason, Commissioner of FTC.

New Castle Members Tour Members Company Pipe Mill

Members of the Purchasing Agents Association of New Castle toured the plant of the Mercer Tube and Manufacturing Company following their meeting April 14, at Sharon, Pa.

Two new members were introduced at the meeting. They were George Fadler and Robert Keenan, both from the Sharon Works, Westinghouse Electric Company.

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- Heavy shafts, bearing to bearing
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The Reliance pre-lubricated bearing provides four times more operating bours without re-lubrication than any other bearing used in motors today. And—whatever your lubrication schedule—you just can't grease'em wrong! To get the complete "inside story" on motor bearings, write today for Bulletin B-2201. It contains hard facts on the advantages of the Reliance pre-lubricated bearing design, with cutaway view, cross-section diagram, comparison chart, and statements by bearing manufacturers. B-14581

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Oregon Association Elects Officers For 1953-54

The Purchasing Agents' Association of Oregon has elected Winston S. Bunnell, Oregon Steel Mills, as president for the 1953-54 year. He succeeds Don J. Tenney, Crown Zellerbach Corporation, who has been elected national director. The new officers were installed at a dinner meeting May 12.



Winston S. Bunnell

Other officers for the new year' are: Harold E. Bloyd, Roberts Motor Company, first vice president; Russell Wetherell, M & M Woodworking Company, second vice president; Arlow J. Webb, Stauffer Chemical Company, secretary; Maynard S. Miksch, Pacific Power & Light Company, treasurer.

Trustees are L. C. Barnes, General Petroleum Corporation; Leonard Clark, Holman Transfer Company, and Merritt L. Simmons, Portland Traction Company.

Paul W. Berry Honored As Houston "Member of the Year"

Presentation of the "Outstanding Member of the Year" award of the Houston Purchasing Agents' Association, was made to Paul W. Berry of James Bute Company, at the 33rd annual Inaugural Ball in the Shamrock Hotel.

Mr. Berry received the award for exceptional service rendered to the Association as treasurer and committee worker, according to John F. Florian, past president, who made the presentation.

Announcement of new officers elected for the coming year was made at the meeting. Gene Walker is president; E. F. Foster, vice president; W. J. McSherry, secretary; and Mr. Berry was reelected

Ju

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302B		309Cb	317	347	430
304		310	321	403	443
308		314	329	405	446
309	+	316	INCONEL	* - NICHRO	ME **

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Gloweld electric welded stainless steel tubing is available in sizes ranging from ¼ inch to 5 inches O.D. inclusive; in standard weight pipe (schedule 40) sizes ½ inch to 2 inches—lightweight pipe (schedule 5 and 10) ½ inch to 4½ inches inclusive.

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All stainless tubing furnished to standard A.S.T.M. specifications unless otherwise specified to suit your particular application requirements.

Globe specialization gives you uniform high quality...

Precision checks — and re-checks — at every stage of production insure Globe stainless steel tubes that meet *your* exacting specifications. For more than thirty years, specialization in production of steel tubes has key-noted all Globe research, engineering and mill operations. Write for the Globe Stainless Steel Tubes catalog.



Producers of Globe seamless stainless steel tubes — Gloweld welded stainless steel tubes — alloy — carbon seamless steel tubes — Globeiron (high purity ingot-iron) seamless tubes — Globe welding fittings,



... Then ALGRIP Banished Slipping Accidents and Pared the Company's High Insurance Rates!

Take a machine tool, surround it with oil-filmed flooring, and you've set the stage for a tragedy. This one—in a southern industrial plant—cost a skilled workman his arm.

Crippling accidents that slashed production.

SAVED:
Lost man-hours and high insurance premiums.

ELIMINATED:

Then we installed A.W. ALGRIP Abrasive Rolled Steel
Floor Plate. Result: No more slipping accidents! For tough abrasive
"grinding-wheel" grain, rolled deeply and densely into steel plate,
makes ALGRIP truly non-skid. It's almost impossible to slip on this
hard-gripping floor plate—even when it's wet or oily—even on steep
inclines!

Benefit: A three-way saving . . . (1) No more costly, crippling accidents. (2) More efficient work and better production. (3) A substantial reduction of workmen's compensation insurance premiums—substantial enough, in fact, to pay for the cost of the ALGRIP installation!

End Slipping Accidents that Cripple Men and Production—and Kite Insurance Premiums.

A.W. ALGRIP—only abrasive rolled steel floor plate in the world—pays for itself in savings from safety. Get the full ALGRIP story today; write for our new Booklet AL-31—without obligation.

Over 125 Years of Iron and Steel Making Experience

ALAN WOOD STEEL COMPANY

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Other Products: A.W. SUPER-DIAMOND Floor Plate • Plates • Sheet • Strip

(Alloy and Special Grades)



Detroit Association Visits Mueller Brass Company Plant

Eighty-seven members of the Purchasing Agents' Association of Detroit toured the Mueller Brass Company plant recently. The group was conducted through all plant departments by sales and production department personnel. A social session in St. Clair Inn late in the afternoon concluded the visit.

Arrangements for the tour were made by the plant visitation committee of the Association, headed by Charles Watrous. Harry F. Lewis, director of purchases for Mueller Brass, is a director of the Detroit Association.

Kalamazoo Valley Association Elects E. H. Nelson President

Earl H. Nelson, of the Checker Cab Manufacturing Company, has been elected president of the Kalamazoo Valley Association of Purchasing Agents. Other officers named were E. C. Wilbur, Precision Castings Company, vice president; Donald J. Corre, Ingersoll Products Division, Borg-Warner, secretary; Sam Folz, The Brundage Company, treasurer; Dallas D. Bachelder, Sutherland Paper Company, national director. Mr. Bachelder is the retiring president.

Jack Hartung presented the quarterly business survey and a statement of business conditions in Kalamazoo.

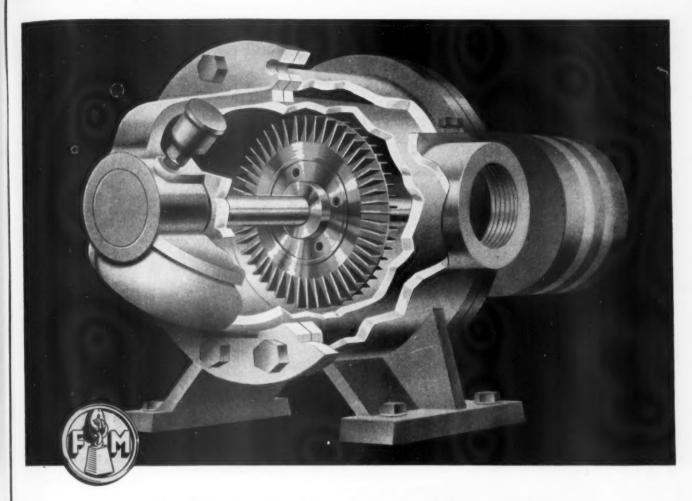
A discussion on "Purchasing Procedures", was presented by a panel consisting of Frank Wotalewicz, J. Franklin Stetler, Lawrence Newland and John Stroud.

L. A. McNeil Elected President Of New Association in Texas

L. A. McNeil of John Dollinger, Jr., Inc., has been elected president of the newly-formed Sabine-Neches (Texas) Association of Purchasing Agents. Other officers are G. O. Hoover, first vice president; V. O. Moyer, second vice president, and J. W. Wiggins, secretary-treasurer.

Board members are W. B. Johnson, Jack Orrick and George Fecel, Jr.

On May 14 the Association visited the Port Arthur drum plant of the United States Steel Company. The tour was followed by dinner at Granger's restaurant at Sabine Pass



Its heart is its one moving part

With castings in quality as well as in quantity, National Bearing Division helps its customers make better products.

When a leading pump manufacturer entrusts National Bearing Division with producing vital pump components, and producing them to the exacting standards required, there are some important reasons why.

This Fairbanks, Morse Turbine Pump combines high pumping efficiency with low pumping costs...thanks to close-fitting, precision-machined bronze liners and impellers that are easily replaced on the job, at a big saving over new housings.

These castings—particularly the impeller—have to be "right" . . . free from blow-holes,

sand inclusions . . . and must be exceptionally fine-grained. Otherwise lost machining time, before defects are found, can seriously increase production costs.

National Bearing Division was picked to supply castings for the very heart of this Fairbanks, Morse Turbine Pump . . . because of an often demonstrated ability to mass-produce non-ferrous castings to a high standard of uniformity and quality.

If your product requires non-ferrous components, it will pay you to investigate National Bearing Division. We have the foundry facilities and skills that can make important contributions to your product performance ... with castings in quality as well as quantity. The end result may well save you money, too!



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Manufacturer-to-You
(no middleman)
from strategically located warehouses

The economies of selling direct-to-you are reflected in the quality of Fuller Brush products. And that quality is matched by localized delivery service—from regional warehouses that we take pride in keeping completely stocked.

#2400 line with oblong head and zipper for quick change. Sizes 12" to 48" for factory aisles.



#2004 oblong shape for wider areas, aisles, etc.

Look in the Yellow Pages of your telephone book for the Industrial Representative in your territory.

Call him today about the products shown here and learn about Fuller Brush service for yourself.



#2013 triangular shape mop head for dusting around desks.

Fuller Launderable Dry Mops

... with special yarn developed by our laboratory for thorough dusting qualities combined with long wear.



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Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

Denver Association Hears Talk On Newspaper Publishing

Alexis McKinney, assistant to the publisher of the Denver Post, was the featured speaker at the April 15 meeting of the Purchasing Agents Association of Denver, held in the Brown Palace Hotel. His subject was "You Can Still Buy It For A Nickel," and dealt with some of the problems of the newspaper publishing field.

The educational forum that followed the meeting was led by Eddy Saulsberry of Ideal Cement Company, who was introduced by Bill McMurtry. Mr. Saulsberry spoke on the purchasing procedures used by his company.

Pittsburgh Association Hears Talk On Public Relations

K. W. Haagensen, director of public relations for Allis-Chalmers Mfg. Company, was the featured speaker at the April 21 meeting of the Purchasing Agents Association of Pittsburgh in the Hotel William Penn.

At the March meeting, the annual Executive Night, two new records were set. The largest total attendance and the largest member attendance in the association's history were chalked up, with 168 members and 171 guests present, for a total of 339.

New members include Leo Finegold, Purchasing Agent, P.G. Publishing Company; D. S. McCleary, Assistant Purchasing Agent, Continental Foundry & Machine Company; and Harry M. Roth, Purchasing Agent, McKinney Mfg. Company.

Central Michigan Members Discuss Lower Cost Office Operations

"Better Values Thru Lower Cost Office Operations," was the subject of an educational forum that preceded the April 21 meeting of the Purchasing Agents Association of Central Michigan, in Dine's Terrace Room, Lansing. Ron Weger was moderator.

Following dinner the members heard a discussion on paper by Leo K. Pouch, and viewed a film entitled "The Paper Made For You," prepared by the Gilbert Paper Company, Menasha, Wis.

Frank Waters, traffic manager, State Purchasing Division, headed a a discussion of traffic problems



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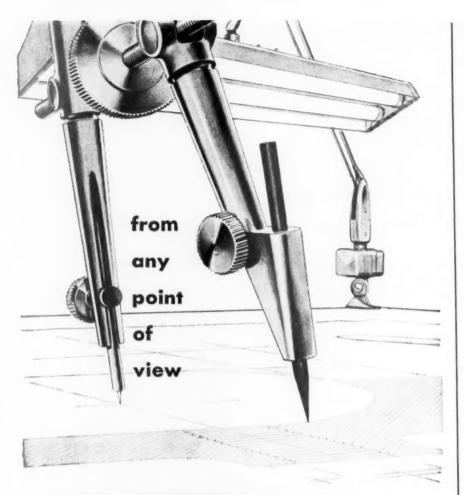
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Lancaster Group Members Guests Of Four Local Suppliers

The Purchasing Agents Club of the Manufacturers' Association of Lancaster, Pa., was the guest of four local suppliers at an evening of fellowship May 15 in the Hamilton Club. Cocktails were served at 6:30 p.m., followed by dinner at 7 p.m.

On April 21 members visited the Hershey Machine & Foundry Company plant at Manheim, Pa. The tour started at 2 p.m., followed by cocktails at the Manheim Legion at 5 p.m. and dinner at 6 p.m. Rev. W. Hamilton Aulenbach, rector of St. Michael's Episcopal Church, Philadelphia, was guest speaker.

New Orleans Ass'n Takes Part In Sales-Purchasing Meetings

The Purchasing Agents Association of New Orleans met with the Sales Executive Council of the Chamber of Commerce in a joint meeting to discuss what the purchasing agents expect of the salesmen.

Participating in the panel representing the purchasing agents of New Orleans were Paul D. Schaeffer, George M. Rittiner, and Harold Porter. They stressed the need for more training programs in salesmanship and better informed salesmen. Salesmen are expected to know about their products, prices, delivery, market trends, they said, and should be able to keep the purchasing agents advised of changes.

Two weeks later the Sales Executive Council met jointly with the purchasing agents and a panel of three sales executives discussed what the salesmen expect of the purchasing agents. On the side of the salesmen were James Lightfoot of the Esso Standard Oil Company and Alvin Bertel, president of Columbia Paper Company. The salesmen asked for cooperation and loyalty, especially to the salesmen who do research and show extra efforts to expedite orders. Price, the salesmen said, should not be the primary factor; service should be at the top of the list when considering purchases.

Three new members accepted into the association are: John Stephens, Assistant Purchasing Agent for the Avondale Marine Ways, Inc.; Donald Kordis, Purchasing Agent, Delta Tank Company; and Robert Seidler, Purchasing Agent and engineer for the Plymouth Cordage Company.

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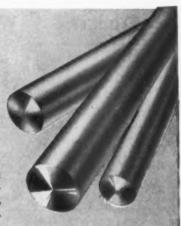


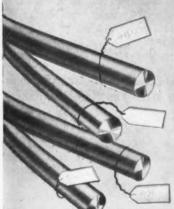
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LaSalle produces a complete range of popular sizes, shapes, and lengths to fit your needs for economical production. Special shapes are produced to order.



Modern equipment and skilled workmanship insure uniformity, strength, finish, and close tolerances.





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These include STRESSPROOF, with in-the-bar strength, wearability, machinability, and minimum warpage; and free machining LA-LED for better parts at lower costs.

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Product	What it is	Suggested Uses
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Sunaptic Acids	High mol. wt. naph- thenic acids, with un- usually low percentage of unsaponifiables.	Driers, emulsifying and flotation agents. Used in preparation of esters, plasticizers and preservatives.
PDO-40	A polymerized, closed-chain hydro-carbon. Dries at room temperature; resists water, alkalies, dilute acids; good color stability; soluble in mineral spirits.	Corrosion resistant sur- facecoatings, metal prim- ers, aluminum bronze vehicle, concrete curing compounds, core oils, and reclaiming agent for rubber.
Propylene Trimer and Tetramer	Commercial grade C ₉ and C ₁₂ mono-olefins.	Synthetic detergents and chemical intermediates.

A Sun representative will gladly discuss these new Sunoco Petrochemicals with you. Or you can get technical data and samples for test purposes. Write Sun OIL COMPANY, Phila. 3, Pa., Dept. PG-6

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TenneVa Association Elects New Officers At April Meeting

New officers of the TenneVa Association of Purchasing Agents were elected at the April 16 meeting in Kingsport, Tenn.

They are: Rollin Post, Monroe Calculating Machine Company, president; Glen Torbett, Summers Hardware Company, vice president; David Massengill, S. E. Massengill Company, treasurer; John Campbell, Mason & Dixon Lines, secretary; and Paul Scott of Kingsport Press, national director.

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Mack Ray of Kingsport, a cafeteria consultant, spoke at the meeting, discussing cafeteria management. He explained the necessity of training in the operation of cafeterias, the knowledge of food, availability, market conditions and the correct use of proper recipes.

The Appalachian Traffic Club and the TenneVa Association held their third annual Import-Export Meeting May 12 at the Country Club in Johnson City, Tenn. The panel of speakers included John S. Correll, Department of Commerce, Atlanta, Ga.; E. M. Ilzhoefer, Esso Export Corporation; H. J. Johnson, Seatrain Lines, Inc.; and O. B. Cloudman, Alcoa Steamship Company. Following the talks a discussion period was held in which industrial traffic, rail, truck, port authority, custom house and purchasing men participated.

Twin City Association Presents "Ever Wish You Had Two Heads"

A skit, "Ever Wish You Had Two Heads," was presented by members of the Twin City Association of Purchasing Agents at the group's annual Executive Night meeting April 8 in the Radisson Hotel. This is the play that was done in 1951 at the national convention by the Chicago Association of Purchasing Agents written by Don Lyons, Stuart Heinritz, Robert N. McMurray Company, and the Chicago group.

Twin City cast members include Charles Metz, W. E. Hendricks, Cliff Berg, Ed Burchell, Ted Paulsen, Al Boessel, Frank Knight, John R. Johnson and Frank Ryan.

The Twin City Association held its annual Easter Party and dinner dance April 10 at the University Club of St. Paul. Corsages were presented to the ladies and a fashion show was presented for the distaff side after dinner.

How a better abrasive begins

Shattering pure diamond bort, hardest material known, at the start of the crushing process in Elgin's laboratories.

Here is how all Elgin Diamond begins . . . in an \$8,000 handful of e diamond bort. For more than 10 years, every step of production, from bort to finished DYMO compound has been completely performed in the Elgin Diamond laboratories, under the ontrol of Eigin technicians . . . a unique production arrangement permitting maintenance of absolutely rigid quality standards.

> Results in hundreds of industrial applications have proved that DYMO finishing is the sure way to reduce costs and produce a better finish every time . . . in less time! Write for specific application data today.

Every day, more and more leading producers find that it's best to FINISH WITH DIAMOND . . . ELGIN DIAMOND.

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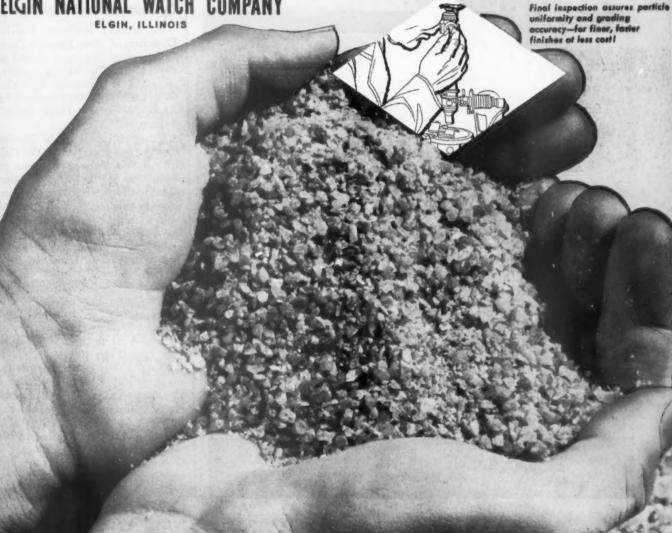
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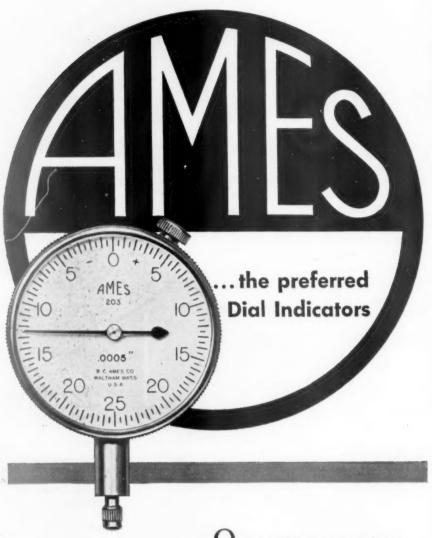


Diamond powder is mechanically sieved into ten grades. The finest sieve grade shown here is ready for further processing.

8 finer grades are further refined from the finest sieve grade by Elgin's "layers of water" process.

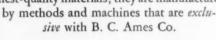
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The reasons behind this decision are the very reasons why you should standardize on Ames dial indicators and dial gauges: - the Ames "Hundred Series" indicators available in four sizes, fit every measuring requirement; they are accurate, sensitive, low in friction, yet are rugged and tough - give more on-the-job time. All Ames products embody latest design and highest-quality materials; they are manufactured









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31 Ames Street C. AMES CO. Waltham 54, Mass. principal cities. Mfgr. of Micrometer Dial Gauges . Micrometer Dial Indicators

Appointments Made For District 2 Conference September 23-24

Virgil M. Lewis has been named program chairman for the seventh annual Southwest Purchasing Conference of Associations in District 2, N.A.P.A., to be held in Tulsa. Okla., September 23 and 24, at the Mayo Hotel.

Additional appointments made by E. C. Wolf, president of the Tulsa Association, are E. J. Murray and H. M. Cosgrove, publicity, and L. E. Patten, conference treasurer.

Elmira Association Hears Corning Glass Works Executive

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J. L. Ward, assistant controller of the Corning Glass Works, addressed a recent meeting of the Elmira Area Purchasing Agents Association at the Mark Twain Hotel. His subject, "Planning for Profitable Operations," dealt with the executive and his relationship to the planning group and buyer.

Hoffman Elected President By Syracuse-Central New York Ass'n

A. Willard Hoffman, Purchasing Director of the Brewer-Titchener Corporation, has been elected president of the Purchasing Agents Association of Syracuse and Central New York. Balloting was conducted April 22 at the Hotel Onondaga, Syracuse.

Other officers include Chester A. Fowler, purchaser with the Columbian Rope Company, first vice president; Joseph G. Strafella, Brunner Manufacturing Company, second vice president; Max Riepel, Alexander Grant's Sons, treasurer; G. L. McCaffrey, Auto-Lite Battery Corporation, secretary. A. Kemp Stevens, Purchasing Director of Aircooled Motors, moves from the president's job to national director.

New directors elected for two years are A. G. Ruediger and J. Edward Quilty. Directors reelected for one-year terms are A. T. Morphy and D. C. Robinson.

Edward F. Borro, development engineer of Durez Plastics and Chemicals, Inc., North Tonawanda, N. Y., spoke on plastics at the meeting.

At the April 20 meeting in Richards Restaurant, Syracuse, Bob Guffie, United Chromium, Inc., spoke on "Industrial Hard Chrome Plat-

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For Maximum Branch Circuit Protection

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NQP QUICKLAG P Circuit Breaker PANELBOARDS

THE LATEST @ contribution to more flexible and efficient branch circuit protection . . . panelboards that are not only safe, dependable, long-lasting and trouble-free but have the added advantage of providing adequately for today's electrical needs as well as future requirements.

Small and compact, these new and improved panelboards feature the new @ QP Quicklag P Circuit Breaker with thermal magnetic overload protection and manual or automatic quick-make and quick-break operation.

NQP Quicklag P panelboards are available in eleven sizes of enclosures — six with main lug connection and five for main circuit breaker connection, 50 — 225 amp capacity. These, plus a stock of individually packed single and double pole QP Quicklag P circuit breakers will fit any job requirement. Because all circuit breakers are interchangeable, it is easy as replacing a light bulb to make changes or add new units.

Install these panelboards on all your branch circuits. You'll find that they will virtually pay for themselves in efficiency and service. For additional information, contact your nearest ® representative, listed in Sweet's or your contractor or wholesaler.

M NQP QUICKLAG P FEATURES

- Quick-make and quick-break operation manually or automatically on harmless overloads, short circuits or severe overloads. Handle position indicates "tripped."
- Quick restoration of service simply by moving handle to "off" and then to "on" position.
- Screwless assembly (just slip breakers in) with one pressure type connection between circuit breaker and bus bar.
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Of all closures, only Gummed Tape becomes a salesman for you. For just a few cents per roll, the tape is imprinted with your company name, trade-mark or message. Your carton is then a traveling advertisement.

Printed Gummed Tape provides better protection, too. It discourages pilfering... because the thief cannot duplicate your exclusive seal. And its adhesive barrier keeps dust, grime and moisture out of the carton.

Thus only Gummed Tape displays your message while it protects your merchandise. So seal with Gummed Tape ...the only form of closure that does so much for so little.

New Association Formed In Pinellas County, Florida

The Pinellas Purchasing Agents Association has been formed in St. Petersburg, Fla. for the purpose of discussing local problems. According to M. C. Mickelson, Purchasing Agent of Pinellas County, it is the group's intent to have a small group through which members can help each other with problems in their own immediate vicinity, mainly Pinellas County.

The new group's constitution and by-laws states that its objects are "to create, promote, or otherwise support worthy purchasing practices considered beneficial to our city. county, state and country, and thus fulfill that civic responsibility which is inherent in our positions." Membership is to be comprised of purchasing agents representing industrial, business, professional, institutional and governmental classifications. The group also is designed "to sell the purchasing profession to management in order that it can attain the prominence and responsibility it so justly deserves."

Fort Worth Association Elects William J. Dean President

The Fort Worth Purchasing Agents Association has elected William J. Dean of General Industrial Supply Corporation as president. He succeeds R. C. Fast, who was elected national director.

Other officers are J. A. Randolph, first vice president; Charles W. Zartman, second vice president; S. J. Johnson, secretary-treasurer; L. L. Jones, and Don Thompson, directors. E. P. Williams is alternate national director.

M.I.T. To Present Packaging Materials Handling Course

The Mechanical Engineering Department of the Massachusetts Institute of Technology will present the 1953 Industrial Packaging and Materials Handling technical short course educational program next October in Boston.

This has been announced by Stanley Price, national president of the Society of Industrial Packaging and Materials Handling Engineers, who will sponsor the course as part of the annual SIPMHE triple feature event of the packaging and materials handling world—the short

(Please turn to page 220)

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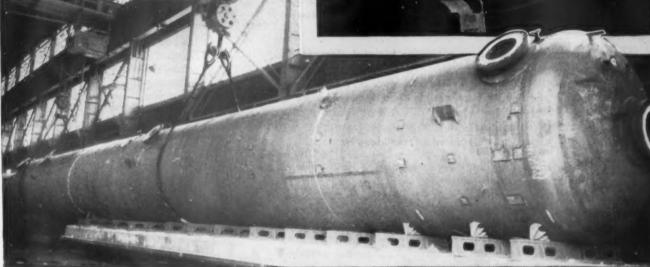
E ven two big cranes groan under the load of this huge, 165-ton petroleum cracking tower. That's a big lift, and it takes 2 hefty wire rope slings to make it safe.

Two braided, 8-part Tiger Brand Wire Rope Slings were used. This type of sling is flexible — and resists kinking and twisting. The heaviest loads can be handled with it quickly and easily.

Tiger Brand Wire Rope Slings come in 435 types and sizes: one to fit almost every lifting job you have. You can choose from 4-, 6-, or 8-part braided slings, as well as regular laid slings.

Occasionally you may run into an especially difficult lifting job that takes a special type of sling. When this happens, our engineers will be glad to sit down with you and work out a satisfactory design. You will find their expert advice very helpful. Just call our nearest sales office.





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UNITED STATES STEEL EXPORT COMPANY, NEW YORK



U-S-S AMERICAN TIGER WIRE ROPE SLINGS

UNITED STATES STEEL



This electric oil pressure "Telegage," manufactured by King-Seeley Corporation, illustrates a use of thermostatic bimetal known as the "double bimetal circuit." Diaphragm A is subjected to the engine oil pressure. The diaphragm movement forces grounded contact B against the insulated contact on the "U" shaped bimetal element C. As the current flows through the circuit, the coil D heats the element, causing it to bend back, opening the contacts momentarily. The bimetal cools in an instant and again the contacts close.

The dash unit encloses a similar bimetal element and coil. Since both heater coils are in the same circuit, a similar bending of the bimetal occurs and the linkage moves the needle accordingly. When oil pressure increases, the bimetal element C is heated more in order to open the contacts; and this same increased heat causes a greater movement of the needle.

Chace Application Engineers, recognized authorities on temperature responsive devices, are available for consultation on your problems in temperature-actuated devices. Chace Thermostatic Bimetal is available in 29 types in strips, coils, random long lengths and welded or brazed sub-assemblies. We invite you to write for our 32-page booklet "Successful Applications of Chace Thermostatic Bimetal," containing condensed engineering data.



(Continued from page 218)

course, the Industrial Packaging and Materials Handling Exposition, and the National Protective Packagaging and Materials Handling Competition.

The four-day short course will begin Monday, Oct. 19, while the exposition will open the following day in Mechanics' Hall close to downtown Boston.

Illinois Tech Offers 4-Year Course In Purchasing; Chicago Association Aided Development

1 1 1

A new management curriculum for the professional education of purchasing executives has just been announced by Dr. Pearce Davis, director of the Department of Business and Economics at Illinois Institute of Technology.

The new purchasing program which will be initiated at Illinois Tech in September, was developed through the research and recommendation of the Purchasing Agents Association of Chicago.

Pioneering Program

This curriculum, Davis said, will be a pioneering educational program. Up to now, he explained, American colleges and universities have offered relatively little specialized training in this important field.

The program in purchasing will be a four-year course of study offered by the I.I.T. Department of Business and Economics and will lead to the degree of Bachelor of Science. A major addition to the school's already extensive curricula in management, the program represents what professional purchasing agents think should be offered by Colleges and what the educators themselves think.

Impetus for development of the new curriculum was given by a recent comprehensive survey conducted by the Purchasing Agents Association of Chicago. This group surveyed its membership of 1,100 purchasing agents in the Chicago area on the subject. "What Purchasing Agents expect from colleges." The Association also desired to give some financial assistance and support to schools that would help serve the demand for trained personnel in this field.

To encourage development of the new curriculum at I.I.T., the Purchasing Agents Association has es-

(Please turn to page 222)



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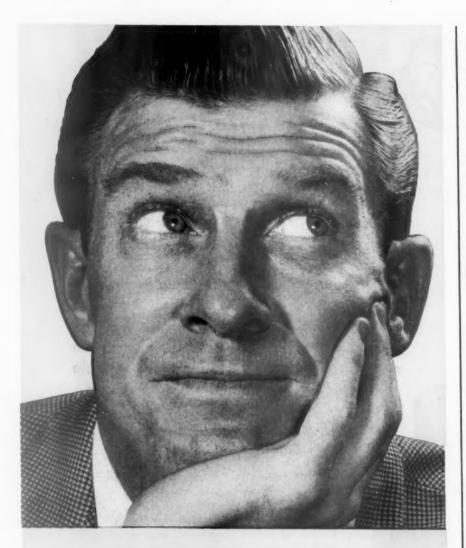
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Please mention PURCHASING Magazine when writing to advertisers.

221



What's the name of that supplier again?

Drawn a blank on a name you should know? Never mind—look in the 'yellow pages' of your telephone directory. And that's not the only information you can find in the 'yellow pages'! Many facts you need are right there too...local suppliers' addresses and telephone numbers, along with thumbnail descriptions of products and services. Next time a name escapes you, remember—you can catch up with it quickly in the 'yellow pages'.

AMERICA'S BUYING GUIDE FOR OVER 60 YEARS

(Continued from page 220)
tablished two four-year full-tuition
scholarships to be awarded by a
joint committee of the Chicago
Association and Illinois Tech.

Two Basic Parts

The purchasing program will be composed of two basic parts: (1) a foundation of general education; and (2) specialized training in purchasing and related management subjects. During his four years of study, a student in the program will take courses in purchasing, accounting, marketing and sales, human relations, management policy, business law, statistics, public speaking, industrial processes, and money, banking and business cycles.

Courses in the Purchasing program will be available in both the day and evening division of Illinois Tech.

Detailed information concerning the new Purchasing curriculum and the scholarships may be obtained from Dr. Pearce Davis, director of the Department of Business and Economics, Illinois Institute of Technology, Chicago 16.

Mechanical Power Transmission Manual Now Available

"Mechanical Power Transmission Manual" is the latest in a series of practical books aimed at helping companies cut maintenance costs and get more profitable operation from new and present equipment. The new book, written by W. A. Williams, and published by Conover-Mast Publications, 205 E. 42nd St., New York 17, N. Y., has over 400 pages, including 220 illustrations, 109 tables and formulas. It is priced at \$6.00 per copy.

New Gasoline Additive Gives 15% More Power, More Mileage

A new gasoline additive described as the "biggest development in motor fuel since the introduction of tetra ethyl lead 31 years ago" will be added to Shell Oil Company's premium gasoline, F. S. Clulow, manufacturing vice president, has announced.

The new ingredient will be supplied this month in 16 cities and will be made available nation-wide in about 90 days.

"It gives the average car up to 15 per cent more power, more



Trumbull's fifty-year leadership in panelboards has never been more in evidence than in its NLTQ line. Leading electrical distributors everywhere recommend them and carry complete stocks. For additional information, let us mail you Bulletin TEB-14.

NLTQX (column type) Panelboards fit standing "I" beam. Available in from 4 to 40 circuits for both 3- and 4-wire services.

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3 WAYS BETTER ...

1. Circuit breaker convenience and protection. Type TQL. Quick-make, quick-break. Thermal-magnetic trip, arc-quenching design and trip-free action for top protection. Convenient plug-in design and manual re-set. Equally important, it has a separate trip indicating position.

2. Strong compact interiors readily removable for fast installation. Busbars molded in plastisol, and braced against damage from current surges. Run cooler than in open air.

3. Compact boxes, protected fronts. Adequate knockouts and gutters. Front integral with barrier. Breaker knockouts in front panel to provide for future circuits.

TRUMBULL (T) ELECTRIC

DEFARTMENT OF GENERAL ELECTRIC COMPANY PLAINVILLE, CONN.

NLTQ Panelboards available in from 4 to 42 circuits for both 3-wire and 4-wire services with lugs only or Trumbull 50 to 225 ampere breakers in the mains, and TQL 120 volt, 10 to 50 ampere circuit breakers on branches. AC only. Underwriters' Laboratories, Inc. listed.

A QUIZ ABOUT THE NEWEST BOSTITCH PROFIT-CLINCHERS



1 How can a squeeze of your finger seal overlapping flaps of tough fiber containers?



2 What is the newest, surest, quickest, cheapest method of sealing small shipping containers?



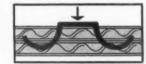
3 How can you clinch staples in soft materials without a blade or clincher under the work?

The Bostitch Line includes more than 800 profit-clinching machines—one to fit almost any fastening need. Staplers for production lines, shipping rooms, offices. Let your local Bostitch man demonstrate them to you. He's under "Bostitch" in your telephone directory.

ANSWERS:

- 1 This powerful new Bostitch Air Drive Stapler with "C" blade—Model C67AD—is ideal for the job. Drives heavy-duty staples through tough materials, easily and rapidly. It's a whiz with large, awkwardly shaped containers!
- 2 Stapling, of course, with the handy new Bostitch P6P Stapling Plier. Its pointed blade makes only a tiny slit to insert the clincher for stapling flaps of small corrugated containers, and lids of all sizes.
- 3 The Bostitch T5 Tacker with Outward Clinch spreads staple legs inside or under the work, entirely from the outside. No blade or clincher needed. Used for fastening insulation around ducts, tags to corrugated containers, many other jobs that could not

be stapled any other way, etc.



☐ Wood ☐ Plastics	☐ Paper ☐ Leather	☐ Rubber ☐ Light Metals	☐ Fabric ☐ Roofing
Ve are presently u	sing (please checi	k)	
□ Nails □ Pins	☐ Glue ☐ Thread	☐ Tape ☐ Rivets	☐ Tacks ☐ Spot Welds
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(Continued from page 222)

mileage, and from 50 to 150 per cent longer life for spark plugs," Clulow said. Gasoline containing the new product also cleans old plugs and cuts down pre-ignition, the most serious cause of knocking. The new additive is TCP, a cresyl compound, he said. The price of Shell premium with TCP will be a half cent above that of other premium gasolines without the additive.

Announce Plans For Largest Single Expansion Program In History of Plastics Industry

1 1 1

Completion of plans for the largest single expansion program in the entire history of the plastics industry has been announced by Bakelite Company, a Division of Union Carbide and Carbon Corporation.

In making the announcement, H. S. Bunn, President, Bakelite Company, stated that a three year expansion program calls for the construction of three large, new plants with facilities to produce Bakelite polyethylene plastic, its compounds and other chemicals from natural gas.

"This Union Carbide expansion program, when completed in 1955, will double present U. S. polyethylene production, bringing total annual production of Bakelite polyethylene to over 250,000,000 pounds," Mr. Bunn stated.

Mr. Bunn said that the three new plants are planned to begin operation separately with this projected schedule: The first will begin operation at Texas City, Tex., about August of this year; by mid-1954 the Seadrift, Tex. plant will be open; and by early 1955 the Torrance, Calif., plant in Los Angeles County is expected to begin production.

"Polyethylene is the most versatile of all plastics, as authorities in the plastics industry have acknowledged," Mr. Bunn pointed out. This versatility is based on a combination of unique properties including excellent electrical characteristics; light weight; resistance to moisture, air, salt water and most active chemicals such as acids and alkalies; flexibility and strength that are maintained at temperatures below freezing.

Polyethylene has a wide range of uses, including many in the packaging field. A few of the more important applications listed by Mr.

(Please turn to page 226)

What you can expect from your

DISSTON DISTRIBUTOR

1. Quality Products

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The Disston name is known the world over for being the guide to top-notch industrial tools. Typical are Disston Metal-Cutting Band Saws. General Industrial Supply Co., Disston Distributor in Fort Worth, Tex., reports this recent testimonial from a customer: Says T. H. Nichols, steelcutter for the Maxwell Steel Company, "We use only Disston Blades throughout our plant. Disston Blades can really take it!"

2. Many Economies

The Disston Distributor saves money for his customer in many ways. Example: McJunkin Corporation, Charleston, W. Va., helps the American Viscose Corporation achieve maximum economy by supplying its Nitro and Parkersburg, W. Va. plants with costcutting Disston Bite-Rite Files.

3. Prompt Service

Your Disston Distributor is nearby, knows your specific needs well because of his frequent contact. His promptness can help you keep your output high. Example: In Philadelphia, Casanave Supply Co. helps keep production rolling smoothly for SKF Industries, Inc. by supplying them with dependable Disston Hack Saw Blades.

4. Expert Advice

Disston Distributors have wide experience in solving the problems you face, and can offer you valuable know-how. In addition they keep you informed of the latest developments in those fields affecting your operations.

So Remember—for quality products, many economies, prompt service, expert advice—see your reliable Disston Distributor. **Call him this week.**



DISSTON METAL-CUTTING BAND SAWS



DISSTON FILES



DISSTON HACK SAW BLADES

HENRY DISSTON & SONS, INC. 422 Tacony, Philadelphia 35, Pa., U.S.A.
Canadian Factory: 2-20 Fraser Ave., Toronto 3, Ont.



Here's some more good advice: 'If you're Jobber, as well as Bonney, stands behind the tools you buy. He has Bonney tools priced to fit your they're topnotch tools at the right price.''

This is the way the men who buy their own tools feel about them. More and more production-minded purchasing agents recognize the value of this attitude on the part of mechanics.

BONNEY FORGE & TOOL WORKS . ALLENTOWN . PENNSYLVANIA

(Continued from page 224)

Bunn were wire and cable insulation; non-breakable and squeezable bottles; extruded film for wrapping many food products; polyethylenecoated paper for numerous other packaging uses; pipes for water supply, radiant heating, chemicals and industrial uses; a wide variety of molded household items as well as countless other products for both consumer and industrial use.

"Bakelite polyethylene is not only the fastest growing plastic," according to Mr. Bunn, "but it has also had the greatest per cent price reduction of any major plastic within the last ten years." Base resins of the type sold in largest volume were recently priced at 44 cents per pound, a 56% reduction from the original one dollar-per-pound price of 1943. Mr. Bunn said, "This steady price decline reflects efficient engineering and production techniques which increased the production rate per unit of investment in equipment by about 600% in the last ten years."

Publish New Book on Industrial Standardization

A comprehensive treatment of all phases of industrial standardization is now available in a new book just published by Conover-Mast Publications, 205 E. 42nd Street, New York, N. Y.

The book, "Profiting From In-

The book, "Profiting From Industrial Standardization", was written by Benjamin Melnitsky, noted writer on industrial subjects and a frequent contributor to purchasing and technical magazines. Stuart F. Heinritz, Editor of Purchasing, wrote the Foreword.

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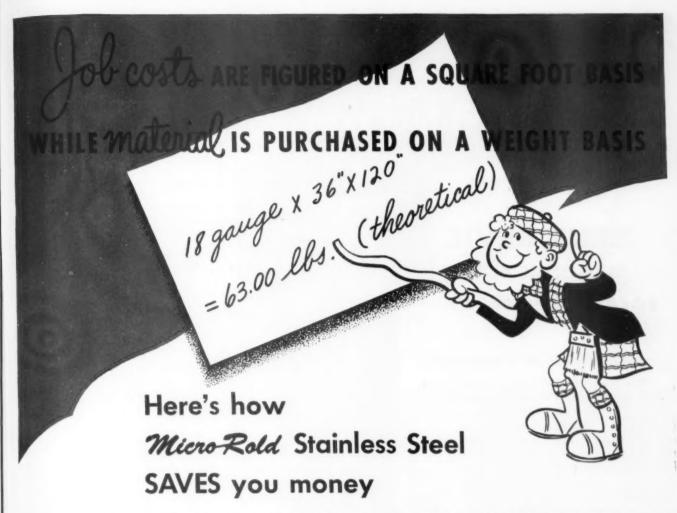
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The book offers a detailed "blueprint" for setting up a profitable standards program. It features valuable information on actual case studies on forming standardization committees, developing internal standards, revising old standards, etc. Complete, authoritative information on materials standards and specifications; purchasing process and finish specifications; manufacturing standards, and many other aspects of standards work, is presented in down-to-earth fashion.

A practical guidebook, the new publication gives precise and detailed data on how to draw up and use a nomenclature system, how to allocate standards activities, responsibilities and authorities.

"Profiting From Industrial Standardization" is priced at \$5.50 per



In the use of stainless steel, the selection of gauge number is usually determined by the minimum permissible thickness having sufficient strength to meet the requirements of the application. When you receive material on the heavy side of the gauge you are paying a premium for stainless surface area.

When sheets are ordered by gauge number, the permissible A. I. S. I. variation in thickness is plus or minus 10%. Thus, if you order 18 gauge, you may receive sheets .052" thick, when a thickness of .0475" would suit your purpose. Using a standard 18 gauge 36" x 120" sheet as an example,

the theoretical weight is 63.00 pounds, but this weight could permissibly vary between 59.22 pounds and 65.52 pounds. Each .001" of thickness adds 1.26 pounds per sheet.

MicroRold sheets may be ordered by gauge number and you can specify they be rolled on the light side of the gauge range. This is true because the equipment is such that more accurate control of thickness is possible.

If you are not a user of MicroRold sheet it will pay you to get the full details. Your steel warehouse distributor will gladly tell you the MicroRold story.



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Unique One-Part Scaffolding Brings Major Savings

Major savings in scaffolding cost and erection time are promised by its new steel scaffolding system, according to Brainard Steel Division of Sharon Steel Corporation.

The new product, described as the ultimate in simplicity, is ideal for all types of plant maintenance, building repairs, etc., as well as construction.



The steel frame is the one basic part,

The scaffold has only one basic part, a standard tubular steel frame; yet, with a very few accessories, it covers the full range of scaffolding applications. Four of the standardized frames form a five-foot-square section four feet high; and multiplies of such sections form towers, long runs of scaffolding, or any structure desired. An exclusive slip-fit design permits one frame to be inserted into another frame without use of nuts, bolts, pins or other fasteners. No tools are required for erection.

Company officials stated that costs to the user are substantially cut by the standardization of parts, which simplifies ordering and inventory problems as well as speeding erection.

Pine Buyer's Guide

A new "Buyer's Guide to Quality Southern Pine", which brings up-to-date the information used by lumber purchasers in selecting Southern Pine, has been published by Southern Pine Association, National Bank of Commerce Building, New Orleans, La.

The new SPA booklet shows the species and items manufactured by Southern Pine mills, as well as the equipment they use.

6502 Avondale Avenue, Chicago 31, Illinois

"We expect 20 years of service or <u>more</u> from these American Quality Springs"

... says SIMMONS COMPANY, World's largest producer of sleeping equipment

Every housewife in America knows that the name Simmons is an ironclad guarantee of quality when it appears on a mattress or sofa.

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If you visited any of the 7 Simmons factories, you'd know why. Simmons has built an unparalleled reputation by *insisting* on fine workmanship and highest quality component parts.

Look at the famous Hide-A-Bed shown here. You don't have to yank and pull to open it into a comfort-

able bed. It glides open easily on 6 counter-balance American Quality Springs. Each of these 9-inch springs must withstand a stretch to 15 inches. In a 20-year period, these 6 helical springs are stretched to the limit 14,600 times.

We produce these springs for Simmons using a highgrade oil-tempered wire. As a result, the finished springs meet very close load tolerances, and they are consistently straight.

If you need a typewriter spring, an automobile axle spring, or a spring to support a giant locomotive, American Steel & Wire will help you design it. Then we'll produce it—any size, any grade of steel, any shape, any finish. You'll get all this at a price you never thought possible.



AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO COLUMBIA-GENEVA STEEL DIVISION, SAN FRÂNCISCO, PACIFIC COAST DISTRIBUTORS

TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS . UNITED STATES STEEL EXPORT COMPANY, NEW YORK



U·S·S American Quality Springs

UNITED STATES STEEL



Federated Metals Division, American Smelting and Refining Company 120 Broadway, New York 5, N.Y.

Plants in: Beckemeyer, III. • Denver, Colo. • Detroit, Mich. • Houston, Tex. • Los Angeles, Calif. • Newark. N. J. Perth Amboy, N. J. • Philadelphia, Pa. • Pittsburgh, Pa. • Sand Springs, Okla. • San Francisco, Calif. St. Louis, Mo. • Trenton, N. J. • Whiting, Ind. (Chicago)

In Canada: Federated Metals Canada, Ltd., Toronto, Montreal

Quartermaster Supply Economy Program Effects Big Savings

An effective supply program designed to exact maximum utilization of materials on hand has resulted in considerable savings at the Quartermaster Inspection Service Command and other participating elements in New York City according to Colonel Robert A. Howard, Jr., Commanding Officer, QMISC.

Participating elements included in the program are the Armed Services Textile and Apparel Procurement Agency, the New York Quartermaster Purchasing Office, the New York Market Center, and the New York Quartermaster Government Furnished Property Office.

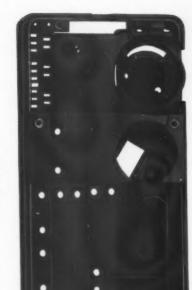
Largely responsible for the efficient supply system existing at the installation is a thorough non-expendable supply inventory maintained for each operating element. The inventory establishes effective control of the location and movement of all furniture, office machines and equipment, and similar related items. It makes possible also for items needed to be obtained from operating units where they are in excess or not urgently required. This has resulted in material savings by reducing outlay of funds on new equipment. It has also obtained greater efficiency in the utilization of supplies on hand.

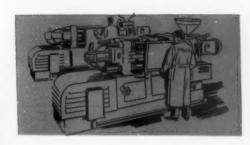
Surveys Check Use

Control of the issuing of supplies has proved of value in the economy program at the installation, stated Colonel Howard, since it makes valid justification by the requiring element the basis for issue of equipment. To achieve fuller utilization of office machinery, a training program in proper usage has been instituted for personnel. Surveys are periodically conducted to determine whether such equipment is used to the fullest extent possible and to withdraw those machines which may serve more usefully elsewhere. Equipment which is in poor condition becomes subject to a salvage and reclamation program. Where feasible, repairs are made locally; items requiring major repairs, or which are irreparable, are shipped to the Brooklyn Army Base for the most economical disposition.

Use of expendable supplies, such as paper, pencils, and other similar items, has been reduced considerably with the establishment of a system of issue on a current-use basis. This system has resulted in

(Please turn to page 232)





Two latest hearing aid cases molded for Beltone Co., Chicago (Shown actual size)

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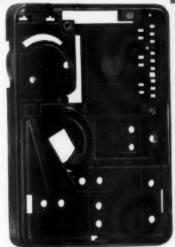
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Casting your plastics problems in their EXACT mold

As electronic hearing aids grow smaller in size, the technical problems of their manufacture grow larger in scope. Beltone, one of several hearing aid manufacturers who are repeatedly using Mills engineering and molding skills, recognized this when they called on us to do their latest models. All of the electrical and mechanical components of a full sized hearing aid had to be mounted in a case a fraction of its conventional size. The resultant complexity of the case raised problems unprecedented in mold design, construction and molding techniques.

Many fine, complex cores had to be built to the same critical tolerances the entire unit demanded. Delicate side core mechanisms had to be built at either end of the case. Four tiny threaded metallic inserts had to be molded into the case. Due to the numerous small, delicate cores, because of many metal-to-metal shut offs required, flash control and weld lines were treated as major molding problems.

Our engineering and molding skills, sharpened by this and similarly challenging jobs, are at your service without obligation. We'd welcome a chance to help you solve your plastics problems wisely, economically and correctly today.



CHARGE - CUSTOM INJECTION MOLDERS . EXTRUDERS . PIPE-TUBING-FITTINGS . BOTTLES & HOLLOW ARTICLES

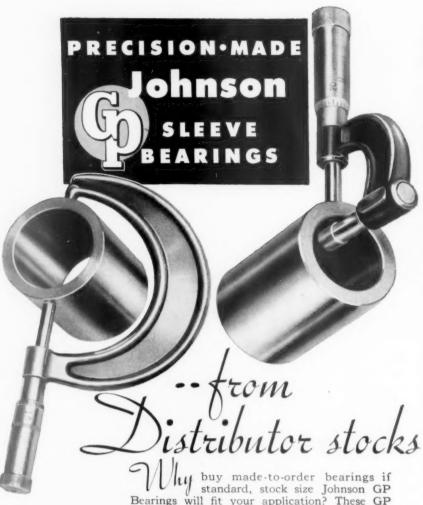
2930 NORTH ASHLAND AVENUE . CHICAGO 13, ILLINOIS





Write on your letterhead for the new Injection Molded and Extruded Plastics Catalog. Or. for detailed information about CHAS MASTIC*, piping, tubing and fittings, write for circulars containing data and illustra-

*Trade Mark Reg.



buy made-to-order bearings if standard, stock size Johnson GP Bearings will fit your application? These GP bearings are precision made, in standard tolerances, in most cases ready for installation. And they are extremely low in cost. Best of all, there is no delay in delivery . . . they are carried in stock by Johnson Distributors. Since there are more than 900 sizes, from ¼ inch I.D. to 4½ inches I.D., Johnson GP (General Purpose) Cast Bronze Bearings will meet virtually all your sleeve bearing needs. Write today for the new Johnson Bearing Catalog.

JOHNSON BRONZE COMPANY 450 South Mill Street, New Castle, Pa.



(Continued from page 230)
eliminating the possibility of maintaining large stocks of supplies by operating elements which do not have actual continuing need for them.

Economies in material maintenance at the installation have been accomplished, which have, in some instances, resulted also in better working conditions and improved safety factors; for example, a fluorescent lighting system installed in the building eliminated the necessity for desk lamps, achieving economies in electric light usage, as well as increased illumination.

The installation's Suggestion Awards Program, which encourages employees to propose new methods for performing work and eliminating unnecessary forms, has contributed to the reduction in the outlay of materials required.

Litchfield Offers Program To Protect Rubber Fabricators And Purchasers

1 1 1

A program to prevent any interruption of synthetic rubber production during the approaching transfer of synthetic rubber plants from government to private ownership was suggested today by P. W. Litchfield, board chairman of the Goodyear Tire & Rubber Company.

Emphasizing that the war-born synthetic rubber industry is vitally essential to America's security and progress, Mr. Litchfield said the following steps are necessary to protect the nation's interests:

 That full production schedules be maintained between now and the time the synthetic plants are finally and officially transferred to private ownership and operation.

2. That we begin now to create a reserve stockpile of at least 200,000 tons of synthetic rubber, building from excesses beyond current needs.

The first step is essential, he said, to provide enough synthetic rubber for our needs and to keep the price of natural rubber within reasonable bounds.

Buyers Should Be Protected

The stockpile is needed for security reasons, accentuated by the possibility of an interruption of production levels during the change of ownership, possibly as long as two years.

He pointed out that some 900 (Please turn to page 234)

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ELECTRIC MOTOR

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CAST BRONZE

An H&D idea for you





This Highly Dependable corrugated box protects and promotes its contents in transit and warehouse. How about your present shipping box? Write for booklet "Creative Package Engineering." Hinde & Dauch, Sandusky, Ohio.

Our 65# Year



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17 MILLS AND FACTORIES . 40 SALES OFFICES



...on nearby shelves of industrial supply distributors.

BAY STATE TAP & DIE COMPANY . MANSFIELD, (Continued from page 232)

fabricators of rubber products, large and small, and their millions of customers are directly involved in the forthcoming transfer of the nation's government-owned synthetic rubber plants, and should be protected against any interruption of the flow of their raw materials.

"Hence, the transition period which may be protracted, is a matter of great national concern. Now is the time to do the planning which will carry us over these rough spots if they should develop."

While the current situation is "comfortable", with supplies of natural and synthetic in balance with demand, and at reasonable prices. we must not be lulled into a sense of false security, Mr. Litchfield warned, citing three factors which must be borne in mind:

1. The current Communist aggression in Indo China which threatens the security of the rubber growing areas of Southeastern Asia.

2. The approaching disposition of government-owned synthetic plants to private corporations.

3. The steadily increasing demands for rubber. It is not unreasonable to expect that by 1960, these total needs will exceed present total capacities, natural and synthetic combined, by 25%.

Westinghouse Breaks Ground For **New Atomic Equipment Plant**

Ground was broken near Pittsburgh, Pa., on May 5 for a factory that will build parts for atomic power plants.

Believed to be the first privatelyfinanced atomic manufacturing plant, the multi-million dollar facility will house the newly-formed Atomic Equipment Department of the Westinghouse Atomic Power Division. Expected to employ initially some 200 people and ultimately perhaps many times that number, the plant "will engineer, manufacture and sell products which have been developed for atomic power plants," Charles H. Weaver, manager of the Division,

"While this plant will not be large at the outset," he declared, "it represents a pioneering step by a private company into the newborn atomic manufacturing industry. We believe it will help assure for Westinghouse and for the Pittsburgh area an important role in the coming industrial age of atomic power."

Skilled Springmakers . . .

with a broad background of experience and engineering know-how produce better springs at lower cost

At Accurate

SKILL, experience and know-how are essential to the manufacture of better springs at lower cost . . . and here at Accurate, we are able to offer liberal quantities of all three. For many customers Accurate's skill, experience and know-how have made it possible to achieve substantial reductions in spring costs.

MMMMM

If you mass produce civilian or defense items, we'd like the chance to show you what we can do for you. There's no obligation. Just send an outlline of your requirements to ACCURATE SPRING MFG. CO., 3825 W. Lake St., Chicago 24, Illinois.

Accurate Springs

SPRINGS . WIREFORMS . STAMPINGS

Write for your copy
of the Accurate Spring
Handbook. It's full of useful
data and helpful short cuts for
making spring calculations.

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Rearing failures are almost all caused by neglecting simple, proven practices of bearing maintenance. Why take these unnecessary losses? Your "Bearing Specialist" member of AFBDA can help you eliminate early bearing failures due to poor maintenance practices and improper installation procedures. Ask this AFBDA expert—one is as close as your telephone—for his advice today!



THE ANTI-FRICTION BEARING DISTRIBUTORS ASSOCIATION

Lighter Fire Hose For Industrial Firefighters

A new lightweight fire hose made with a synthetic fiber promises to make firefighting a safer, easier job for most firemen in the near future.

Called "Highflex" and developed by the B. F. Goodrich Company, 100 feet of the new hose weighs about 20 pounds less than the same length of standard hose.

Dacron, a synthetic fiber woven into the fabric hose cover, makes the new hose so light, flexible and easy to rack that a standard fire truck equipped with Highflex can carry about 500 feet more hose than its normal load.

According to B. F. Goodrich, use of its new hose will expand the fire protection service afforded any industrial plant or community without adding other firefighting equipment. Trucks carry more hose to the fire faster; firemen put the hose into action sooner.

Announce New Principle In Wire Rope Construction

1 1 1

A new principle in wire rope construction, which engineers believe will solve a 50-year-old problem in deep-well drilling, was recently announced by Jones & Laughlin Steel Corporation.

The new principle employs the ability of the coiled spring to flex and to resist crushing. The result: a wire rope with a core that is a coiled steel spring. No wire rope previously manufactured has employed this principle. J & L says it may substantially affect the many other industries in which wire rope is used.

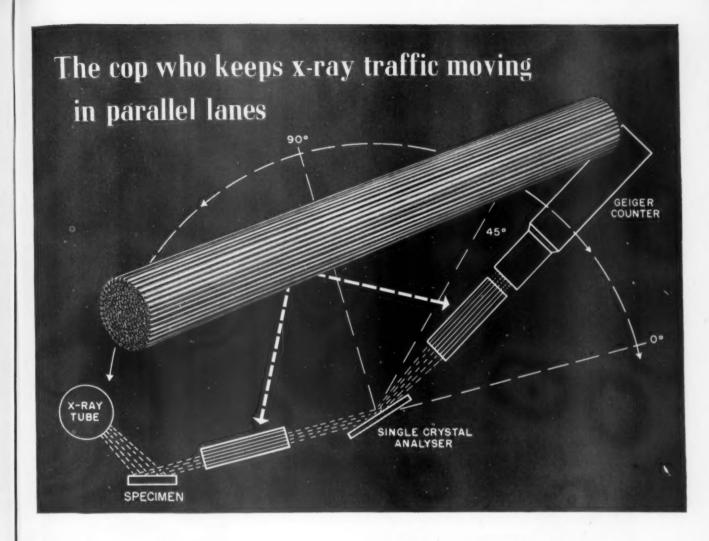
Development of the new product, designed for use in rotary drilling rigs, was begun 10 years ago at J&L's Wire Rope Division plant at Muncy, Pa., under the supervision of Peter P. Somerville, general manager of the Division.

Douglas J. Henecker, manager of sales for J&L's Wire Rope Division, had this to say about J&L's Spring-Center Wire Rope:

"Field tests made with the Spring-Center Wire Rope show clearly that it will have the long life, despite hard usage, which rotary rig drillers have been seeking for many years."

Mr. Henecker compares the core of the new wire rope with the old-fashioned screen-door spring.

(Please turn to page 238)



Fluorescence analysis is the new, fast way to find out which elements and how much of each are in alloys—without destroying the sample of the alloy.

This trick is accomplished by bombarding the alloy specimen with X-rays using a Fluorescence Analysis Unit produced by North American Philips, Inc. The x-radiations of each element bounce off the specimen only to be separated according to wavelength and measured.

As the x-radiations leave the specimen they shoot through bundles of fine tubes known as "collimators". The collimator acts as a kind of traffic cop, keeps the rays moving in parallel lanes, reduces divergence. This is an interesting

job, and we're pleased that North American Philips chose Superior fine nickel tubing for it on the basis of its uniformity in diameter, wall thickness and finish.

Undoubtedly you have opportunities where tubing could be helpful—as a carrier, a weight-saving structural member, or as a shape that saves machining time. Look into the variety of forms, sizes, and analyses Superior produces to tight specifications. Take advantage of the experience and testing facilities that Superior brings to focus on your problem. Tell us the nature of your application and we'll send you information and a Data Memo by return mail. Superior Tube Company, 2034 Germantown Ave., Norristown, Pa.

Round and Shaped Tubing available in Carbon, Alloy, and Stainless Steels, Nickel Alloys, Beryllium Copper, Titanium and Zirconium.



West Coast: Pacific Tube Company, 5710 Smithway St., Los Angeles 22, Calif. UNderhill 0-1331 All analyses .010" to %" O.D.
Certain analyses (.035" Max. wall) up to 1%" O.D.

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with KEA wiping towels...



"I decided long ago to stop buying scrap rags and waste by the pound and switch to Kex wiping towels because a lot of the stuff we were getting wasn't usable. It had no uniformity and the men had to pick and choose the right piece for every job. That isn't true with Kex-every square inch is usable.

"After the first few months of using Kex Service my month-end cost for wipers was down substantially! The men have a uniformly-sized, absorbent towel for every job. And we don't run the risk of scratching or damaging delicate precision machinery."



YOU DON'T BUY A THING-just pay a low monthly rental. Kex towels are distributed nationally - for complete information, see your Classified Telephone Directory for nearest Kex distributor, or write Kex National Service, 295 Fifth

Avenue, New York 16, N.Y.

REG. U.S. PAT. OFF.



It isn't Kex unless it's imprinted with the Kex name

(Continued from page 236)

" A little spring of that kind has great flexibility. Yet when the strongest man squeezes it, he discovers that the little spring, although made of lightweight wire, has a tremendous ability to resist crushing."

In addition to these advantages. he says, the new Spring-Center Wire Rope, because of the void inside, provides a reservoir for lubricant, giving more constant maintenance of lubrication than any other wire rope now used on rotary rigs.

New Stitching Method Cuts Wire Costs 24%

Arcuate wire stitching, Acme Steel Company's new carton stitching method, was introduced to industry at the AMA Packaging Exposition held in Chicago, in April.

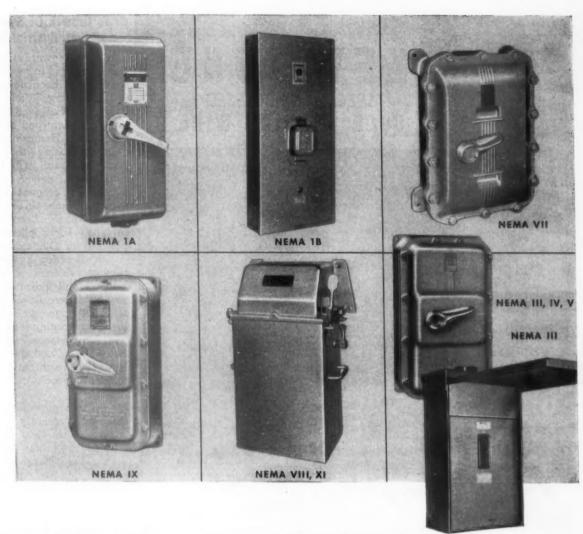
This new stitching method takes regular flat stitching wire, puts an are into it prior to the stitch-forming operation, then drives and clinches the stitch at higher speeds. Arcuate wire stitches are stronger, lighter, and practically buckle free.



Arc or bow-like cross-section stitches greater strength.

The arc shape of the wire gives these stitches higher column strengths. Because of this arcuate stitches can be made from lighter gauge wire. A saving in wire results. Each coil will now produce a greater number of stitches. For example, by using .103x.014-in. wire instead of .103x.020-in. wire, a coil of the same weight will deliver 42% more stitches. Translated into dollars, this amounts to a 24% cost saving per coil.

Other advantages of the arcuate stitching method include: virtual elimination of jamming, lengthening of operating periods (between re-loads), formation of perfect stitches more consistently, less machine down time, elimination of puncturing box liners, etc.



This complete AB-I Circuit Breaker line

solves all your application problems

Here's how to wrap up every circuit protection problem in your plant—with the complete line of enclosed Westinghouse AB-I Circuit Breakers.

As shown above, there's an AB-I Breaker for every operating condition—indoors and outdoors, in wet and dusty locations, in explosive or corrosive vapors and dusts. It's a simple matter to select the right NEMA enclosure for any application. Ends shopping around for "specials"—saves you time and money.

AB-I's relieve you of many worries. They

reduce downtime as much as 98%* compared with fused devices—eliminate the hazards of fuse bridging, too. They save on maintenance—no replacement parts needed. They end unnecessary power outages with inverse-time-delay tripping action. And they protect workmen from live parts and costly accidents.

For more information on how AB-I Circuit Breakers can help you, call your Westinghouse Representative or write for B-5456, Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pennsylvania.

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*Name of company on request

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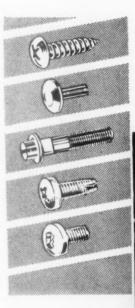
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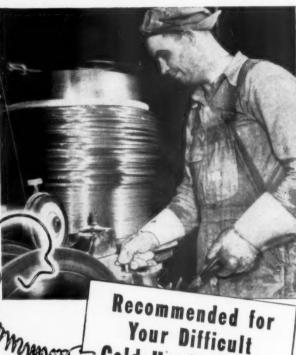
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KEYSTONE

"SPECIAL PROCESSED"
COLD HEADING WIRE



The severe displacement of metal during the cold heading process requires wire that has been designed specifically to meet the requirements of your product. The following analysis of Keystone "Special Processed" Cold Heading Wire is recommended for difficult cold heading:

Cold Heading Jobs

C1006 - C1012 for Clutch Heads

C1006 - C1022 for Phillips Heads

C1006 - C1022 for Struck Slot Heads

C1108 - C1109 for Phillips Head Wood Screws

C1035 - C1038 for Heat Treated Screws and Bolts

The excellent grain flow properties of this wire assures the desired upsetting and die forming qualities you need for greater efficiency in your particular operation.

INDUSTRIAL WIRE SPECIALISTS

Keystone Steel & Wire Company
PEORIA 7, ILLINOIS

Cites Growth Of Synthetic Fibers In Industrial Fabrics

A trend toward the use of synthetic fibers in woven industrial textiles has been noted by Frederic A. Soderberg, Vice President in Charge of Sales of the Noone Division of Kenwood Mills, Peterborough, New Hampshire.

In discussing this growth Mr. Soderberg, said, "The unusual properties of the newer synthetic fibers. which have accounted for their tremendous usage in consumer materials, have also been explored concurrently for application to industrial fabrics. Our experimental work in this direction has produced convincing evidence of their value to industry and indicates that entirely new fields are developing for their use. Although we expect natural fibers to continue as materials of great importance, we are certain that many advantages can be gained from 100% synthetic materials or blends of wool, cotton, and synthetics."

Items incorporating the new fibers which have recently been developed by Noone include specially constructed filter blankets and cloths, fume house bagging, and textile machine clothing. An interesting all-synthetic fabric known as Flalon has been produced in conjunction with Burgess-Berliner Associates, Chicago, Illinois, for use as padding on all types of presses.

U. S. Rubber Issues Booklet
On Electrical Wires and Cables

The electrical wire and cable department of United States Rubber Company has published a new 76-page booklet entitled "U. S. Electrical Wires and Cables for the Chemical and Petroleum Industries".

Divided into four main sections: Insulation Compounds; Jacket Compounds; Constructions; and Technical Data, the booklet follows the successful pattern of U. S. Rubber's earlier book on the coal mining industry.

The compound sections have been expanded to include butyl insulation, heat- and moisture-resistant insulations, thermoplastic types, the general-purpose neoprene jacket, and the polyvinyl chloride type jacket. Copies may be obtained by writing the Electrical Wire and Cable Department, United States Rubber Company, 1230 Avenue of the Americas, New York 20.

TAYLOR Insulation (Fish Paper)

is extremely tough . . . has high dielectric strength and excellent bending qualities . . . its hard surface resists abrasion from contact with rough spots in slots.

Want to make something of it?

Make it into armature slot insulation, armature end laminations, field coil insulation, metal box liners, washers, arc shields, formed slot wedges, formed specialties...or any other applications requiring excellent electrical characteristics. Color: gray.

Make it from sheets and rolls...or ribbon rolls for automatic machines.

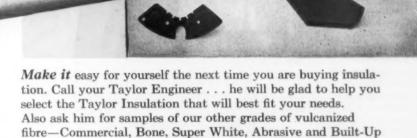
SPECIFICATIONS

Finish. Calendered or uncalendered

Punching . . . Up to 1/8"

Sheet size . . 56" x 90"

Roll width. . 56" in thicknesses of .005" through .090". Coils down to ¼" for thicknesses of .005" through .090".



Let us make it for you in our Fabricated Parts Division. We are equipped to turn out parts to your exact specifications . . . at the right price . . . with deliveries to match your production schedules.

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Plastics . . . see where they can fit into your design plans.

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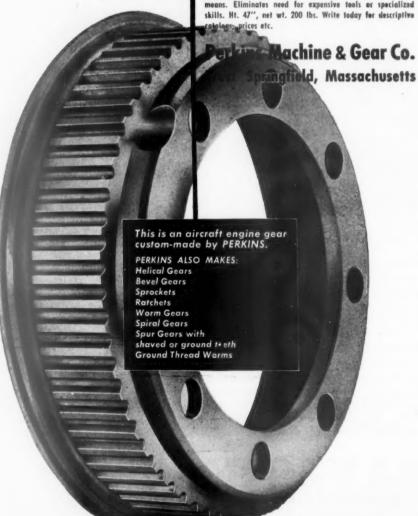
Think of Perkins first and you can think of maintenance last!

WHEN the functional efficiency of your product is largely dependent upon the effectiveness of its integral power transmission system, the quality of the gears you need to transmit power is the major consideration.

Through its entire 35 years of operation, Perkins has specialized in the production of gears to customers' specifications—any sixe, any quantity, metallic or non-metallic. Consequently, among consumers of custom-made gears, PRECISION & PERKINS are accepted as synonyms. For trouble-free power transmission, specify Perkins custom-made gears. Have us quote on your requirements!

NOTE 1: A new product is the Perkins Precision Spring Coller. This coiler (patent applied for) turns out precision springs - any type, shape, size, from wire sizes .005 to .125.

2: Another new product - the Perkins "Bendit 15" - a patented metal forming machine bends and shapes sheets, rads: strips tubing into innumerable complex as well as simple forms that would be difficult or impossible to make by other ans. Eliminates need for expensive tools or specialized skills. Ht. 47", net wt. 200 lbs. Write today for descriptive



Booklet Offers Guidance On **Buying Manufacturing Plant**

A booklet offering practical guidance to the prospective small business man planning to start or buy a manufacturing plant has been announced today by Y. Brynildssen, Acting Administrator of the Small Defense Plants Administra-

The booklet, One Hundred and Fifty Questions for a Prospective Manufacturer, was prepared by Associate Professor of Small Business. William M. Hood of the University of Michigan, in cooperation with

The new booklet is on sale by the Superintendent of Documents, Washington 25, D. C., for 20 cents.

The booklet raises exactly 150 questions and suggests lines of inquiry covering 14 broad subjects including: Personal ability; organization; production; financing; insurance; location; plant equipment and layout; production planning and contracting; purchasing; personnel; packaging; marketing; and records, costs, and pricing.

The booklet also describes selected sublocations under each heading, suggested for further study.



COMMEMORATIVE PLAQUES

Every organization should keep on hand this big 52-page catalog, illustrating over 150 suggestions for handsome, imperishable, solid bronze plaques, Sent free - ask for Catalog A. Write: Dept. 34.

TROPHIES and MEDALS, TOO!



Special catalog illustrates 900 cups, trophies, medals, etc. suitable for presentation as prizes and awards in all kinds of contests, or for testimonial purposes. Sent free — ask for Catalog B.



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There's ample room for a full wrench grip. The handwheel is big and easy to grip. Inside the pipe ends you'll see more than enough threads to prevent possible jamming of the seat. There's weight where weight counts --In fact, you find all the best design features in O-B valves. Ask your distributor about them.



4374-V



WHY... SHENANGO MEEHANITE METAL BAR STOCK means superior quality parts!

THERE are many reasons why Shenango tubular and solid bar stock is preferred for bearings, bushings, pump parts, liners, sleeves, gears, dies, gauges, and other common and special parts. Here are a few:

FIRST, centrifugally cast Shenango tubular bars assure more uniform pressure-dense grain, and complete freedom from blowholes, sand inclusions and other similar defects. They are better able to withstand friction, abrasion, and all kinds of stresses.

SECONDLY, both solid and tubular bars are made of superior, scientifi-

cally controlled Meehanite Metal. The metallurgical structure of Shenango Meehanite Metal is predetermined and controlled throughout the foundry operations, to produce the best quality bar stock available. What's more, machining speeds can be increased, and a smoother, finer finish is assured.

Get all the facts
SEND FOR BULLETIN NO. 152

SHENANGO-PENN MOLD COMPANY

Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SARMANGO

ALL RED BRONZES . MANGANESE BRONZES . ALUMINUM BRONZES MONEL METAL . NI-RESIST . MEEHANITE® METAL

Pittsburgh Plate Announces All-Glass Insulating Window

The Pittsburgh Plate Glass Company has revealed that it is beginning the manufacture of the first all-glass double-glazed insulating window, edges of which are electrically fused to provide a glass-to-glass seal having no metals, bonding materials or other assembled parts in its construction. To be known as "TwindoWeld."

To be known as "TwindoWeld," the new product was described by Wallace R. Harper, vice-president of Pittsburgh Plate, as "an ideal insulating window, having all the advantages of the assembled double-glazed units now on the market plus the permanency of true glass-to-glass sealed edges. TwindoWeld, having no metal in its construction, also eliminates edge conductivity, making it particularly desirable for refrigeration and air-conditioning applications.

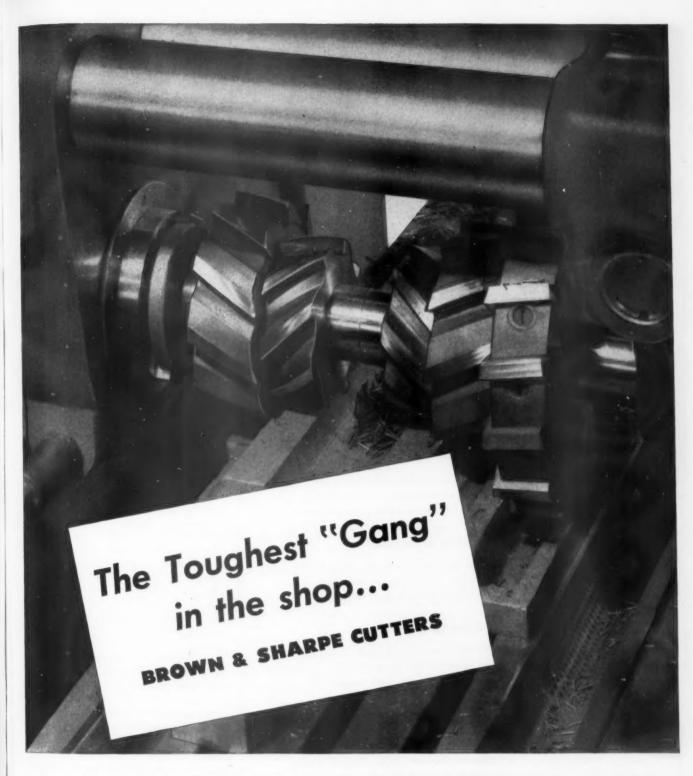
TwindoWeld consists of two layers of eighth-inch thick glass separated by a three-sixteenths inch air space. The air between the two panes of glass is removed in the manufacturing process and replaced with especially dried air. Internal air pressures are adjusted to enable the insulating units to withstand atmospheric pressure in all parts of the United States having altitudes under 3,000 feet.

The new insulating glass is as simple to install as a single thickness of glass. Test panels exposed for a five-year period under varying atmospheric conditions at Billings, Mont., Jacksonville, Fla., Burlington, Vt., and Newark, N. J., have all provided excellent service with no reported failures in any of the test installations.

Sees PVC Ending Corrosion For Chemical Industry

The problem of corrosion in structural material used in handling chemicals has been solved by the development of a new plastic, known as unplasticized PVC (polyvinyl chloride). This was the statement made by George S. Laaff, director of research and development of the Bolta Company, Lawrence, Mass., at the recent meeting of the American Society of Mechanical Engineers.

PVC is one of the materials developed to replace scarce alloys during World War II. Recent processing has made it possible to utilize fully the plastic's special physical phy



Users everywhere have proven for themselves that Brown & Sharpe Cutters can "take it" . . . that they "stand-up" under the higher speeds and feeds of modern production milling. That's why more shops prefer them. They're expertly made from the finest steels and available in a broad selection of types and sizes, including a complete line of end mills. Write for illustrated Catalog to assist you in ordering.

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IT'S GOOD to get in the scrap—but better to keep your steel off the scrap pile. So stop rust, the creeping disease that cripples steel—whether in equipment or product. Check your rust problem here:

Rust on raw stock?

Remove it with a water-mixed solution of Oakite Compound No. 32, the inhibited liquid that dissolves rust and scale without affecting sound metal surfaces.

Rust and grease on surfaces to be painted?

Use Oakite Compound No. 31 or 33 to remove rust, grease, heat scale, carbon smut, welding fluxes—deposit a thin, insoluble phosphate film on surface to insure firm, long-lasting paint adhesion.

Preventing rust while parts are being processed?

Use Oakite Special Protective Oil. Full strength or diluted, OSPO quickly displaces water, covers steel surfaces with thin, rust-preventive film. Apply by hand, or immerse parts in tank.

Cleaning and conditioning metal for painting?

Use the Oakite CrysCoat Process, the patented method that cleans metal, prevents rust before painting, and protects against future corrosion—yet costs as little as 20 cents per 1,000 square feet.



FREE KIT gives facts. Ask your local Oakite Technical Service Representative, or write Oakite Products, Inc., 54 Rector St., New York 6, N. Y. No obligation.

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OAKITE

MATERIALS : METHODS : SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

(Continued from page 244)
cal and chemical properties as structural material for such equipment
as pipes, vats, tanks and fume hoods
used in the agricultural, chemical,
automotive, glass, food processing,
mining and smelting, oil, steel, synthetic fiber industries, etc.

Unplasticized PVC is available in the form of sheets from 1/32" through 1" thick, and as tubing from 1/4" through 6" in diam. It can also be obtained as bars or solid blocks for heavy cross sections, or in the form of welding rod, and can be molded into standard pipe fittings. It has applications in any industry where resistance to corrosion is the main concern. It is capable of being machined on the common wood and metal working tools, and may be sawed, cut, turned, milled, bored, punched and polished.

Pressure Sensitive Tapes Makers Form Association

Manufacturers of pressure sensitive adhesive tape products have formed a trade association, known as the Pressure Sensitive Tapes Manufacturers Association. Richard G. Breeden, Jr., Glenview, Illinois, is the newly elected Secretary of the Association.

Products of interest to this organization are many types of pressure sensitive tapes that have a flexible backing and an adhesive coating on one or both sides. These adhesive tapes have extensive uses in industry and in the home, including packaging, sealing, wrapping, labeling, holding, painting and decorating.

M. Davier, Vice President and General Manager of Van Cleef Bros., Inc., was elected President of the association.

Some of the immediate objectives of the association are to propose and clarify government specifications; develop standards in test methods and nomenclature; collect statistical data of interest to the industry and general public; and to promote the increased use of pressure sensitive adhesive tape products.

The following manufacturers are charter members of the national association: Behr-Manning Corp., Industrial Tape Corp., Minnesota Mining & Manufacturing Co., Mystik Adhesive Products, Sanette Manufacturing Co., Seamless Rubber Co., Technical Tape Corp., Van Cleef Bros., Inc.



Pouring castings in shell-molds at Aloyco's foundry, Bloomfield, N. J.

ADD ANOTHER NEW JOB FOR PLASTICS

• Castings are being poured in shell-molds of sand and phenolic plastic here in the foundry where ALOYCO valves are made. This new process of shell-molding is much faster and produces castings of much closer tolerance than conventional molds.

These shell molds, like body armor for our soldiers, refrigerators that stay colder, lightweight X-ray splints, automobile bodies, boats, adhesives, coatings, pipes, and gears are among the many products recently made better or cheaper by plastics.

Almost half of our modern plastics are made by combining phenol with formaldehyde, using high temperatures and suitable catalysts. The resulting plastics are then molded by heat and pressure into finished products having virtually any desired properties.

ALOYCO valves made of Aloyco 20, Monel or nickel

have proved to be especially effective in handling the corrosive sulphuric or hydrochloric acid catalysts, thereby protecting plastics from discoloration or contamination. Makers of today's myriad plastics, like so many other chemical processing industries, rely on ALOYCO valves to withstand corrosives encountered during the formation and subsequent treatment of their products.

Our practice of working out specific corrosion problems under actual line conditions, together with the long experience gained in producing corrosion-resistant valves exclusively, have made us the largest specialists in the field. ALOYCO valves go hand-in-hand with chemical progress.

If corrosives play a part in your business write to the Aloyco Corrosion Engineering Service about your own problems. 3.14



ALLOY STEEL PRODUCTS COMPANY, Inc.

1312 West Elizabeth Avenue, Linden, N. J.

Plants: Linden, N. J.; Bloomfield, N. J., Elizabeth, N. J.

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when you install **EMERSON-ELECTRIC** AIR CIRCULATORS

Now's the time to install the breezemaking fan equipment that will keep spirits and efficiency up during the hot months ahead. Emerson-Electric Air Circulators give large-volume, penetrating breezes, to keep your people comfortably and pleasantly cool all summer and for years to come. Send today for complete installation data.

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Backed by the famous 5-Year Factory-to-User Guarantee, these powerful fans are available in 24" and 30" blade sizes, with twospeed, ball-bearing capacitor-type motors lubricated for 6,000

hours' service. Your choice of floor, counter, wall or ceiling mountings. For further information see your electrical contractor or write for Bulletin No. 712.



Roll-about Air Circulator Versatile! Brings cooling breezes anywhere, anytime. 18" deep-pitched blades and two-speed motor assure large air delivery. Height adjusts 28" to 48". Silver gray finish, heavy safety guards. 5-Year Guarantee.



National Plastics Exposition At Cleveland In June 1954

The Sixth National Plastics Exposition will be held the week of June 6, 1954 at Cleveland, Ohio, in the Cleveland Auditorium. This Plastics Exposition is sponsored by The Society of the Plastics Industry. Inc., the trade and technical society in this field.

All branches of the plastics industry will exhibit at the 1954 Exposition. Molders; laminators; extruders; reinforced plastics prod-ucts manufacturers; film, sheeting and coated fabrics processors; raw material suppliers; machinery and equipment manufacturers; tool, die and mold makers; and other components of the plastics industry.

Exhibits will be on one level for the convenience of the visitors and also for ease of installation.

The Sixth National Plastics Exposition will be open to representatives of business, industry and the military. It will not be open to the public.

Instrument Tests Protective Devices While In Service

The development of a new testing instrument designed to cut down on electrical equipment and power failures and reduce the threat of electrical fires has been announced by the Multi-Amp Corporation, Harrison, N. J.

The company explained that before the development of this new instrument, there existed no simple, safe method of checking currentactuated protective devices in the field. Called the "Industrial Multi-Amp," this portable high current test unit now makes it possible to check circuit breakers, overload relavs and other current-actuated devices before they are installed, when they are installed, and periodically after they are in service.

The Multi-Amp is a unique loading device, accurately adjustable in stepless increments with fingertip control. Testing requires connecting the device to the proper output terminals of the Multi-Amp and adjusting to the proper value while observing a current indicating instruments and timer. When the results are checked against the manufacturer's published time-current curves or against a "typical calibration table" the result is a quick, easy test which tells whether or not protective devices are really pro-



How an empty barrel proved JNOBA RESISTS STEA

"Last week I told one of my men to steam out an empty UNOBA barrel for use as a trash container. In about an hour he came back complaining that it couldn't be done. He had used the steam cleaner, with chemicals, for over 30 minutes without visible success. The UNOBA, though slightly lighter in color, was still clinging to the sides of the barrel, and still looked and felt good enough to use. You see, we've been sold on Union's products by their performance."

In this unplanned "test," William Gardner, Equipment Superintendent for J. H. Welsh & Son, Contracting Company, of Phoenix, Arizona, proved again that UNOBA grease resists extremes of temperature and moisture.

Like other leading firms, Welsh & Son have found through experience that UNOBA's amazing ability to cling to metal gives outstanding protection against rust and corrosion. And multi-purpose UNOBA has saved them time and money by reducing grease inventories and eliminating the use of the wrong lubricants on expensive equipment.

Give your equipment and machines the dependable protection of multi-purpose UNOBA grease.

OFFICES: LOS ANGELES: Union Oil Building . CINCINNATI: 2111 Carew Tower Building

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NEW ORLEANS: 917 National Bank of Commerce Building



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Personalities



IN THE NEWS

John R. Welsh has been appointed Purchasing Agent for ferrous scrap for the American Brake Shoe Company, New York City. Mr. Welsh joined the



John R. Welsh

company in 1946 as a buyer in machinery and construction, after graduating from Princeton University. He is located in the company's headquarters Purchasing Department in New York City.

Elmer Smith has been appointed Director of Purchases at the Grayslake, Ill. plant of the Fresh'nd-Aire Company, a division of the Cory Corporation, Chicago. Mr. Smith formerly was with the American Brass Division of Anaconda and Massey-Harris Company. At the latter firm, he was the Procurement Manager for their defense program.

During World War II, Mr. Smith was an Air Force fighter pilot captain with the 8th Air Force in Europe. A native of Kenosha, Wis., he is a graduate of the Kenosha College of Commerce.

Mr. Smith will make his headquarters at the new Grayslake plant.

Bert J. McNamara has been appointed Purchasing Manager of the Pratt & Whitney Division of the United Aircraft Corporation, Hartford, Conn. Mr. McNamara has been serving as assistant to the general manager.

A native of Los Angeles and a graduate of Loyola University there, Mr. McNamara joined the company October 1, 1950 and has served as coordinator of P&WA's atomic engine project. He served four years in the Army Air Forces during World War II also as chief of the power-plant branch of the procurement division of the Air Materiel Command at Wright Field, Dayton, Ohio.

Jacob W. Dunnell, a veteran of 26 years of service with Pratt & Whitney's purchasing staff, will serve as consultant to Mr. McNamara.

J. P. Engle, formerly Assistant Purchasing Agent for Sinclair Refining Company in Houston, Texas, has been named Purchasing Agent of Sinclair



J. P. Engle

Oil and Gas Company in Tulsa. He succeeds H. A. Woodard, who has been in the post since 1917 and who has retired.

R. D. Troutman has been named to succeed Mr. Engle in Houston.

Carl Peterman, Purchasing Agent for Bliss & Laughlin, Incorporated, Harvey, Ill., has been promoted to the post of Director of Purchases.

John Bossert, formerly Assistant Purchasing Agent, has been appointed Purchasing Agent. Robert W. Koch, Director of Purchases of The Firestone Tire & Rubber Company, Akron, Ohio, has been appointed a Special Assistant to the Sec-



Robert W. Koch

retary of Defense. The assignment of Mr. Koch will be that of securing effective and efficient procurement methods and operations throughout the Department of Defense, according to Roger M. Kyes, Deputy Secretary of Defense.

Mr. Koch is a graduate of the University of Pittsburgh. He was employed by Firestone in 1925 and was assigned to the Purchasing Division of the Firestone Steel Products Company. In 1930 he was named Purchasing Agent for the parent company and in 1943 was made Director of Purchases.

During the leave of absence of Mr. Koch, Norman Smith, Purchasing Agent for Firestone, will temporarily take over some of Mr. Koch's duties.

William F. Burk, Jr., has joined the Carborundum Company, Niagara Falls, N. Y., as Staff Assistant to the Purchasing Manager. Before joining Carborundum, Mr. Burk completed his second tour of duty with the U. S. Navy. He was stationed with the U. S. Navel ammunition depot, Crane, Ind., where he was responsible for procurement of all inert materials used in production and maintenance.



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A new catalog containing complete data on all types of Campbell Chain is yours for the asking. Write for your copy today. Duell Gabbert has been appointed Purchasing Agent and Traffic Supervisor, Chicago district, of United States Steel Products Division of United States Steel Corporation. Mr. Gabbert first joined U. S. Steel Products division in August, 1944, as assistant plant accountant and production scheduler. Prior to that time he had been associated for over 20 years with a number of steel container manufacturers.

Fred G. Krach has been appointed to the new position of Purchasing Agent in Charge of Raw Materials at Servel, Inc., Evansville, Ind. The new position



Fred G. Krach

was created to concentrate all rawmaterials procurement in one section. Mr. Krach had been Assistant Purchasing Agent since November, 1951. He joined Servel in 1931 as a materials control clerk.

Erwin F. Schmidt will serve on Mr. Krach's staff as Buyer of Forgings and Castings.

William A. Gallmeister is Buyer of Non-Ferrous metals.

Jerry L. Tromly is Buyer of Ferrous Metals.

Herb Lubke has been named Assistant Purchasing Agent for Solar Aircraft Company's Des Moines, Iowa plant. He replaces Sid Snodgrass, who has resigned because of ill health.

Wayne Summey has been named Supervisor of Material Control. He joined Solar in 1951.

Homer Bible was named Assistant Supervisor of Material Control. He has been with the company since 1945.

Edmund F. Mansure, chairman of the board of E. L. Mansure & Co., Chicago, has been nominated by President Eisenhower to head the General Services Administration. The Mansure firm manufactures upholstery supplies and has offices in Chicago, Philadelphia, Bluefield, Va., and Los Angeles.

Mr. Mansure, 51, is a resident of Libertyville, Ill., and is a former president of the Illinois Manufacturera Association and also served as a member of the Illinois Revenue Laws Commission.

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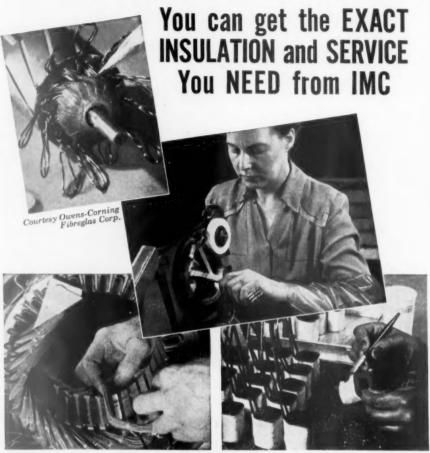
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Ralph A. Maxwell has been named Director of Purchases for Ben Hur Mfg. Company, Milwaukee. He formerly was for 12 years Director of Research Purchasing for Caterpillar Tractor Company, Peoria, Ill.

Robert L. Glerhahn, formerly of the purchasing staff, has been named Pur-

chasing Agent.

Malcolm T. Olsen, formerly Director of Purchases for Ben-Hur, has been appointed contract sales manager, functioning directly under the presi-

Gordon M. Stevens has been named Purchasing Agent of the Autocar Company, Ardmore, Pa. Mr. Stevens joined Autocar in 1939, starting as a clerk and moving up to layout draftsman and subsequently to Assistant Purchasing

M. G. Linnell has been named Purchasing Agent for the General Electric Company's Appliance Control Department at Morrison, Iil. Before his new appointment Mr. Linnell had served as Supervisor-Production and Purchasing.

Mr. Linnell has been associated with General Electric since 1941 when he was general foreman of manufacturing for gyroscopes at the West Lynn works. From 1942 to 1946 he served in various positions with other companies. In 1946 he returned to GE as foreman of manufacturing and supervisor of Production and Purchasing, Wiring Device Plant, Lowell, Mass.

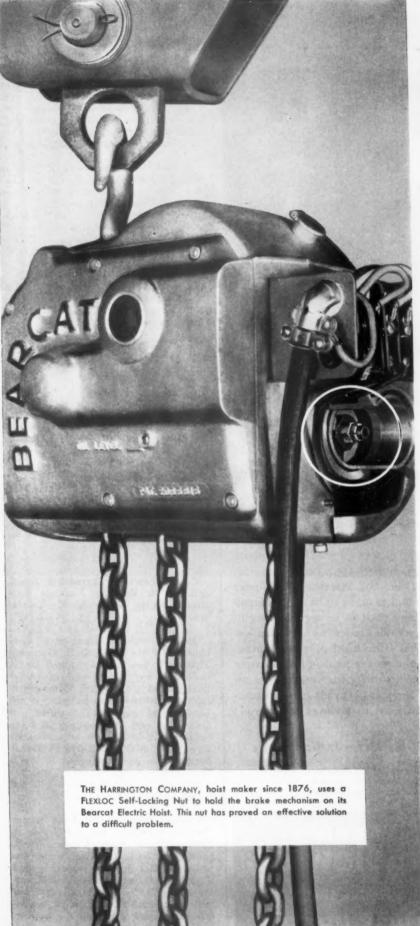
I. B. Cornett has retired as Purchasing Agent of Monterey County, Calif., after 27 years' service in the Purchasing Department. He first joined the department in July, 1926 under his brother, Iver J. Cornett, who was then Auditor and Purchasing Agent.

Robert A. Nylander, Office Manager and Purchasing Agent for Inter-State Oil Company, Kansas City, Kan., has been elected treasurer of the company.

Wray Kephart has been appointed Division Purchasing Agent for Gar Wood Industries, Inc., Wayne Division, Wayne, Mich. A native of Pittsburgh, Mr. Kephart joined the Gar Wood Purchasing Department in 1947. Previously he served with the material conservation department of Fisher Body Division of General Motors and with the Associated Press in Detroit.

Charles T. Laechelt, formerly assisttant secretary-treasurer and comptroller with Wheelco Instruments Company, has been appointed Purchasing Agent for Taco West Corporation, Chi-

Leo Wildermuth has been named Purchasing Agent of the Ideco Division of the Dresser-Stacey Company, Columbus, Ohio. Mr. Wildermuth has been in charge of salvage sales for North American Aviation, Inc. He was educated at Ohio State and Franklin Universities.





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Henry M. Schmidt has been named Purchasing Agent for Johnson Service Company, Milwaukee. He succeeds Carl F. Rohrbeck. Mr. Schmidt has been Assistant Purchasing Agent for several years and has been identified with material control and purchasing operations since 1942. He has been with Johnson Service since 1929.

Mr. Rohrbeck, who was named Purchasing Agent in 1917 will continue to take an active part in the firm, acting in a consulting and advisory capacity.

Robert G. Lambrecht, Purchasing Agent for the Automatic Spring Coiling Company, Chicago, has been named Assisant General Manager.

Mrs. Ruth M. Slafter has been appointed a Buyer for the company.

Stiles R. Eifield has been appointed Director of Raw Materials Purchasing for Fieldcrest Mills, Spray, N. C. In his new post, Mr. Eifield will be responsible for the purchasing of spot cotton and for advising the management on cotton policies.

J. S. Ragsdale will continue as Director of Wool and Synthetics Purchasing for Fieldcrest Mills' blanket mill and woolen and worsted yarns for the Karastan rug mill.

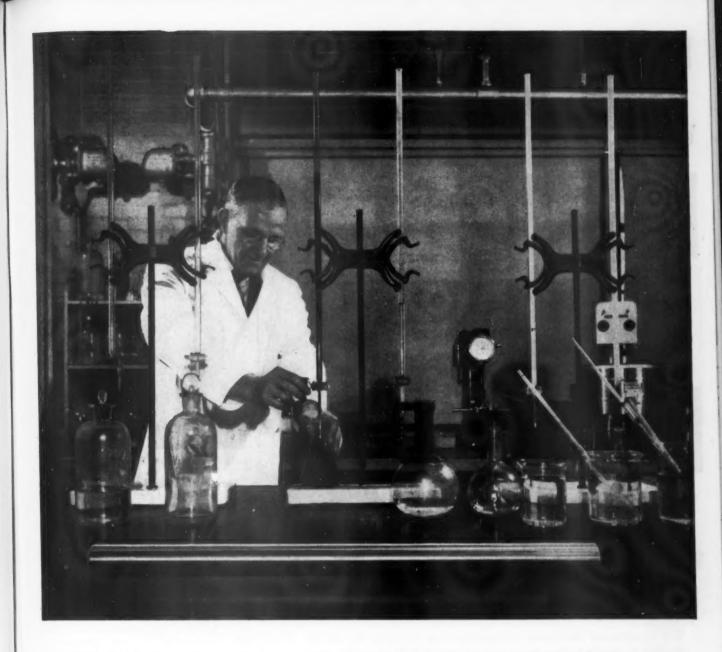
H. Grady Slaton has been named Purchasing Agent for the Celanese Corporation of America's Cel-River plant at Rock Hill, S. C. He succeeds Kenneth Rosenbaugm, who resigned to join the National Container Corporation.

William M. Lawrason has been appointed Manager of Purchasing of Atlas Steels Ltd., Ottawa, Can. He formerly was Assistant Purchasing Agent for the Steel Company of Canada, Ltd., Hamilton.

C. K. Edward, Purchasing Agent, and C. H. Randall, Assistant Purchasing Agent, will assist Mr. Lawrason.

John A. Seibert, Director of Purchasing for the D. L. Clark Company, Pittsburgh, has been appointed to the additional post of director of advertising. Joining the Clark Company in 1937, Mr. Seibert was assigned to the handling of purchases in 1940. His association with the company was interrupted in 1942 when he served for three years in the U. S. Army's Transportation Corps. At the end of World War II he returned to his original position, and in 1950 was elected to the board of directors.

Eugene Johnson has been named Purchasing Agent for the Lydie & Clinton Cotton Mills, Clinton, S. C., succeeding Bailey Williams, who has resigned. Mr. Johnson formerly was business manager at the State Training School in Clinton. He was with the mills from 1930 to 1942, when he entered the army, and held the position of Purchasing Agent from 1936 to 1942.



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Paul W. Knox has joined the central purchasing staff at the Cleveland general offices of Eaton Manufacturing Company. Mr. Knox will be responsible for the entire requirement of steel for the company.

Before joining Eaton, Mr. Knox worked in various capacities for 17 years with the U. S. Steel Corporation, starting with American Sheet & Tin Plate Company and the Carnegie-Illinois Steel Corporation, predecessors of U. S. Steel.

Ralph F. Merriam has been named Director of Purchases of Tinnerman Products, Inc., Cleveland. Mr. Merriam formerly was for 10 years Purchasing Agent for Grand Industries, Inc., Cleveland.





Ralph F. Merriam Edward W. Wehrle

Edward W. Wehrle, formerly Assistant Purchasing Agent for Tinnerman, has been appointed Purchasing Agent. Prior to joining Tinnerman in November, 1950, Mr. Wehrle was associated with American Steel & Wire Company and the Purchasing Department of Jack & Heintz Precision Industries, Inc.

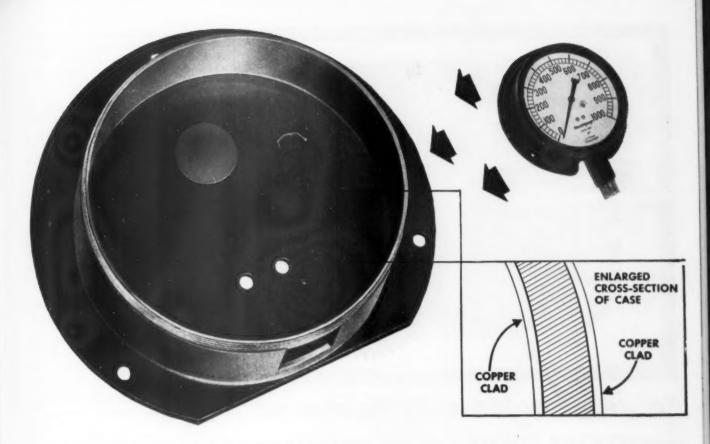
John T. Messert has been appointed Purchasing Agent of the Philadelphia Steel & Wire Corporation, Philadelphia, succeeding Edward Hitzeroth, who has retired. Mr. Messert joined the company in 1941 as director of priorities, a position he held until 1945 when he was appointed Assistant Purchasing Agent.

He attended Wharton School of the University of Pennsylvania and is a member of the Purchasing Agents' Association of Philadelphia.

J. B. Kitchen has been named Division Purchasing Agent for the Texas-Louisiana Gulf Coast Division of Stanolind Oil and Gas Company, succeeding the late M. S. Biggs. Mr. Kitchen joined Stanolind's purchasing department in January, 1943, in the general office at Tulsa.

Edward A. Siegel, Purchasing Agent and Controller for Sealy Mattress Company, Chicago, has been named to the new position of assistant to the president. He continues as company secretary.

David Sanders has been named Purchasing Agent for Sealy.



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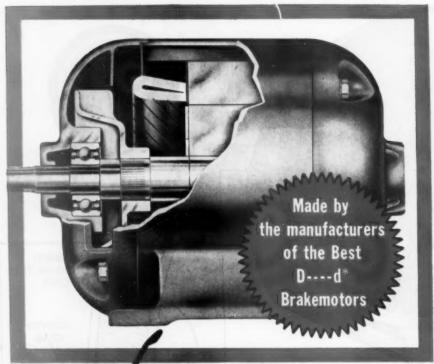
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William F. Gerety has been appointed Director of Purchasing for Kaman Aircraft Corporation, Windsor Locks, Conn. He replaces John J. Carson, who has resigned.

Mr. Gerety joined Chance Vought Division of United Aircraft Corporation in 1942 as subcontract manager and was appointed Assistant Purchasing Agent of the firm in 1946. In 1950 he became Vought's Purchasing Agent. He joined Kaman in 1952.

Tommy M. Coker has been named to the newly created office of Storekeeper and Assistant Purchasing Agent of the City of Santa Maria, Calif. Mr. Coker served as Purchasing Agent at Camp Cooke before inactivation proceedings began and was manager of a PX in San Luis Obispo.

Frank B. Ralston has been appointed Purchasing Agent of the Carlisle Chemical Works, Inc., Reading, Ohio. Before joining the Carlisle Company Mr. Ralston was connected in a similar capacity with Owens-Corning-Fiberglas in Newark, Ohio.

G. D. O'Connor has been named Assistant to the General Purchasing Agent in New Orleans for the Southern Pacific Lines. He succeeds J. R. Cade, who has been named assistant to the general storekeeper at San Francisco.

Harry A. Starr has submitted his resignation as Purchasing Agent for the City of Portsmouth, Va. Mr. Starr said he was returning to the employ of Taylor-Parker Company, Inc., as their store manager in Norfolk.

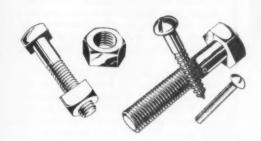
Haskell E. Shaw has been appointed Purchasing Agent of Aldon Construction Company, Los Angeles. He formerly had been associated with Van Wagoner-Swan, Inc., as secretary-treasurer, and with Van Wagoner Constructors, Inc.

William F. Haldeman has been named Director of Purchases for the Charles Bruning Company, Inc., Chicago.

Louis L. Ackerman has been appointed Director of Purchasing for Warwick Manufacturing Corporation, Chicago. Mr. Ackerman formerly was Assistant Director of Purchasing for Capehart-Farnsworth Corporation, and formerly Director of Purchasing for Arvin Industries, Inc.

Charles E. Grayson has been named to the position of Purchasing Director of the Davenport Newspapers in Davenport, Ia. He formerly was county circulation manager.

Walter Brown has been elected Vice President in Charge of Purchasing for Interstate Electric Company, New Orleans.





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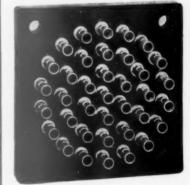
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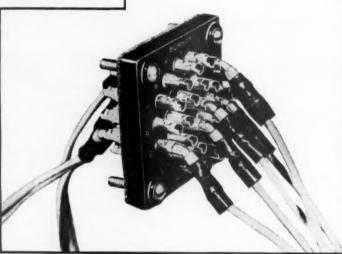
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Wm. T. Wyler, Box 126, Stratford, Conn. Telephone — Bridgeport 7-4293

Wm. A. Chalverus, Carson Road, Princeton, N. J. Milton O. Kassing has been appointed Purchasing Agent for Scullin Steel Company, St. Louis.

James E. Nolan, former Purchasing

James E. Nolan, former Purchasing Agent, has been elected vice president and assistant to the president. Mr. Nolan is a former president of the St. Louis Purchasing Agents' Association.

Lawrence E. Priscal has been appointed Director of Purchasing for the Sentinel Radio Corporation, Chicago, Mr. Priscal has been associated with the firm for 21 years. For the last few years he has been managing director of the service department.

J. L. Jones, former Director of Purchasing, has been named to the newly created position of new products engineer.

Norman L. Symons, formerly Assistant Director of Purchasing, has been appointed Director of Purchasing of Argus Cameras, Inc.

Howard H. Hubbell, who retired as Purchasing Agent of the Bridgeport Fabrics Company, Inc., Bridgeport, Conn., was honored at a testimonial dinner given by his fellow employees.

Harry A. Hall, III has been named Purchasing Agent of Kyanize Paints, Inc., Boston.

Pete Spraines, 52, Purchasing Agent at Williams Air Force Base, Mesa, Ariz., for the past three years, died recently after a lengthy illness.

Frederick Moesser, retired Purchasing Agent for the Doehler Die Casting Company, Brooklyn, N. Y., died recently in Florida where he had been living since his retirement four years ago.

NEWS OF YOUR SUPPLIERS

The G. A. Gray Company, Cincinnati, has announced the appointment of the firm of Harrington Wilson Brown Company, New York City, as representatives for the sale of its line of planers, planer type milling machines and horizontal boring, drilling and milling machines, in eastern New York State, southern Connecticut, northern New Jersey, and the northeastern counties of Pennsylvania.

American Cyanamid Company, Calco Chemical Division, Bound Brook, N. J., has appointed Samuel E. Firestone a sales representative in the Philadelphia territory. Prior to his present appointment Mr. Firestone was assistant to the mid-central regional sales manager.

Ehret & Kinsey, Chicago representatives of the American Flexible Coupling Company, Erie, Pa., has opened a Milwaukee office at 2400 West Clybourn Street, under the direction of James A. Gramling.



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ZONE

Spencer Rubber Products Company, Manchester, Conn., has named Harry R. Lloyd sales manager of the re-cently created Molded Rubber Division. Mr. Lloyd formerly was general sales manager of Davidson Rubber Company, Boston. Prior to that he was sales service manager of Sponge Rubber Products, Shelton, Conn., and. earlier, assistant to the sales manager of Spencer, Inc., New Haven.

Airborne Accessories Corporation, Hillside N. J., has announced the ap-pointment of John Cinkosky to head up its industrial sales division. Mr. Cinkosky formerly was vice president in charge of sales at the Centric Clutch Company.

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Boston Woven Hose & Rubber Company, Boston, has appointed Martin T. Dillon manager of its New York division. Mr. Dillon has been with the Boston firm for 30 years, devoting his entire career to sales in the New York

The Colorado Fuel and Iron Corporation, New York City, has appointed K. B. Stuart general manager of coke and chemical sales. Mr. Stuart, who has been with the company since 1929, will make his offices in the C. A. Johnson Building in Denver, Colo.

Hyster Company, Portland, Ore., formally opened its New York dealership and national accounts headquarters at 10-10 Bridge Plaza South, Long Island City, N. Y., on May 14. The new dealership has been in operation about six months. Don Shaffer is manager of the dealership, Ken Mattfeld is office manager and Allen Talcott is service manager.

Sandvik Steel, Inc., New York City, has opened an office at 20005 James Couzens Highway, Detroit 35, Mich, for the distribution of Sandvik Coro-mant tools. Butler C. Brewen, formerly with Vascoloy Ramet Corporation, has been appointed manager of the Coromant division and will be located at the Detroit office.

Udylite Corporation, Detroit, has named Frank Reha sales engineer in the Michigan territory. He replaces Louis J. Minbiole, who recently was named assistant sales manager of Udylite Division.

A. O. Smith Corporation, Milwaukee, Wis., has announced the appointment of George M. Graetz as manager of the new eastern plant of its Welding Products Division, now under construction at Lancaster, Pa. Mr. Graetz most recently had been acting as project manager in the development of the new plant for manufacture of welding electrodes. The Lancaster plant will be completed probably by early summer.

Welding Products Division of the A. O. Smith Corporation has announced the addition of three new distributors

PURCHASING

of welding electrodes, welding ma-chines and welding accessories. They are: Pensacola Welding Supply Company, 507 Palfox, Pensacola, Fla.; Worland Oxygen Company, P. O. Box 730, Worland, Wyo., and Guilford Welding Supply Company, 1600 Guilford Avenue, Baltimore 2, Md.

A new brochure, "The Spotlight Is

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On A. O. Smith," issued by the Welding Products Division of that company, gives specifications on all available machines and tells of the many types of welding electrodes and welding accessories sold by the division.

Solar Steel Corporation, Cleveland, has announced the awarding of a contract for a new, large, modern steel warehouse and office building to be built on 20 acres of land in Cincinnati. The new plant will replace Solar's present Cincinnati plant located on Bogen Street. The new plant will have over 50,000 square feet of heated interior for steel storage and steel processing.

The Geo. Worthington Company, Cleveland, has established a new order service department to speed up handling of orders and customer shipments. It is estimated that this centralizing and unifying of functions related to order handling will speed up customer service from 20 to 25%.

The Pettersen Manufacturing Company, Santa Barbara, Calif., has appointed C. W. Stilson director of sales. Mr. Stilson will have his headquarters in Chicago, and also Washington, D. C., in connection with government activities. After graduating from Harvard, Mr. Stilson was a branch manager of the Dictaphone Company, assistant sales manager of the Telautagraph Corporation, and midwestern manager of the National Association of Manufacturers. Recently he was assistant sales manager of the Gerlach-Barklow Company.

Inland Steel Company, Chicago, has announced the promotion of two sales executives. Robert M. Buddington, formerly manager of the company's Chicago district sales office, has been named assistant general manager of sales. Derrick L. Brewster will replace him as manager of the Chicago sales

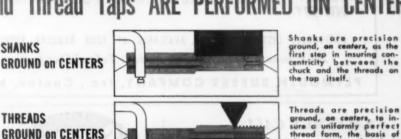
The midwest sales office of Monsanto Chemical Company's Texas Division, formerly at Akron, Ohio, has been moved to the company's sales offices in the Union Commerce Building, Cleve-

The Bellows Company, Akron, Ohio, has announced the appointment of three field engineers. R. C. Smith will work out of an office at 1447 Main Street, E., Rochester, N. Y.; Aaron I. Kutz, will make his office at 70 East 45th Street, New York 17, N. Y.; and Robert E. McClure will be located at 307 United Building, 43 Leon Street, Boston, Mass.

June, 1953



because.. All Important Operations on Pratt & Whitne Ground Thread Taps ARE PERFORMED ON CENTERS



Threads are precision ground, on centers, to insure a uniformly perfect thread form, the basis of clean, accurate threads in the finished work.

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Outside diameters are pre-cision ground, en centers, another step in maintain-ing necessary concentricity between shank, pitch di-ameter and crests of the thread.

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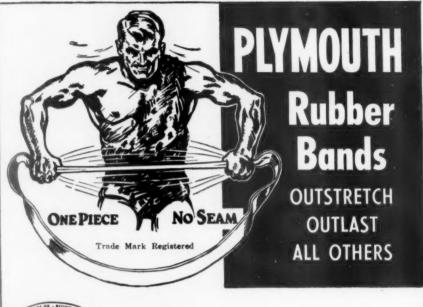
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THEM .

• Bands for Every Purpose

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NATIONALLY DISTRIBUTED . . . AVAILABLE AT YOUR REGULAR SUPPLIERS All Plymouth Standard Bands Made to Federal Specifications

PLYMOUTH RUBBER COMPANY, Inc., Canton, Mass.

Continental Steel Corporation, Kokomo, Ind., has announced the promotion of two men in its sales department. L. B. Alley succeeds F. A. Lewis as sales manager of Chain Link and Ornamental Fence Division. Mr. Lewis was recently promoted to the position of sales manager of the Merchant Trade Division of the company. Jack E. Elliott succeeds L. B. Alley as assistant sales manager of the Chain Link and Ornamental Fence Division.

Crucible Steel Company of America. New York City, has appointed Richard L. Roberson assistant manager of its Indianapolis branch. Mr. Roberson joined Crucible Steel in 1938 and has held positions as office manager and sales service engineer.

Crucible Steel also has appointed M. G. Brown assistant manager of its Los Angeles branch. Mr. Brown joined Crucible Steel in 1936 and at the time of his new appointment he was supervisor of tool steel sales in the Cleve-

land branch.

Borg-Warner Corporation, Indianapolis, has named Stanley B. Lindh sales promotion manager of its Atkins Saw Division

Multi-Hydromatic Welding Manufacturing Company, East Detroit, Mich., has named the Robert H. Newton Company of Cleveland as Multi-Hydromatic representatives.





Consult us for your steel castings requirements. We can assure you of prompt, efficient service.

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DEVIL'S PUTTY a new graphite impregnated plastic refractory for: steel and gray iron ladie linings; making up spouts and runners; linings for ferrous and non-ferrous metal melting furnaces and similar applications.

applications.

DEVIL'S PUTTY reduces refractory inclusions, thus producing cleaner castings; withstands severe thermal shock without "sluming off"; contains chemically treated graphite that will not burn out of the mix, which aids surface lubrication and permits cleaner and faster pours. Molten metal has no sticking tendency to DEVIL'S PUTTY lining, so, slag rises quickly to top for easy skimming.

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Three of the many types and sizes of USG Quality Gauges now carried in stock

of instruments—233 types, dial sizes, and size ranges without delay. Many of these gauges are obtainable immediately from the local stock of distributors of USG Gauges in principal cities throughout the United States. Or the may be ordered through your USG distributor directly from factory stock at Sellersville, Pa. Take advantage of this fast delivery service. Call the distributor of USG Gauges in your locality today for information on gauges.

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OTHER DIVISIONS OF AMERICAN MACHINE AND METALS, INC. AT SELLERSVILLE, PA.: GOTHAM INSTRUMENTS, AND AUTOBAR SYSTEMS

JUNE, 1953

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economical packaging of large or
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Whatever bags you need...
Bemis is your best source.
Check with your Bemis Man.

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Udylite Corporation, Detroit, has named James L. Clifford district manager of its New York sales office. He succeeds A. B. Hoefer, who recently became a vice president of Udylite and vice president, general manager of the Frederick B. Stevens, Inc., a wholly-owned subsidiary of Udylite Corporation.

Automatic Switch Company, Orange, N. J., has announced that it will open a factory branch at 923 East Third Street, Los Angeles 13, Calif., in order to expand its West Coast service.

Sterling Electric Motors, Inc., Los Angeles, Calif., has appointed John R. Howell and Robert T. Dudley regional sales manager. Mr. Howell will serve as sales manager for the western part





John R. Howell Robert T. Dudley

of the United States and will operate from Sterling's headquarters plant in Los Angeles. Mr. Dudley will serve as sales manager for the eastern areas and will maintain an office at 6842 Ridgeland Avenue, Chicago.

Sterling also has announced the appointment of Kenneth J. Plants as district manager for the New York office. Prior to his appointment with Sterling, he had been sales manager of Goodyear Rubber Sundries, New York district manager for Reynolds Metals and for the Plastics Division of the Firestone Tire and Rubber Corporation.

Republic Steel Corporation, Cleveland, has named Gordon R. Snyder sales representative of steel equipment products in Detroit for its Berger Manufacturing Division. Mr. Snyder had been a sales trainee until his new appointment.

A. M. Byers Company, Pittsburgh, has announced the appointment of Buckley M. Byers, grandson of the firm's founder, as general manager of wrought iron sales. Mr. Byers joined the firm in 1940 after his graduation from Yale University. He served as assistant manager of the company's Washington office before entering the U. S. Navy as an ensign in 1942. Upon his return to A. M. Byers Company in 1945 he was made assistant manager of the firm's New York office. In April, 1947, he became manager of the export department, and on February 1, 1951, he was appointed assistant manager of steel sales.

NEW WILLSON Kover-Mor Goggles

with strong, lightweight nylon eye cups

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Fit easily over modern prescription glasses—use standard 50 mm. round lenses



NOTICE THE RIGID
METAL TOP BAR

—standard on Willson Kover-MorGoggles. Makes them easier to handle—holds them firmly in place. Two-piece adjustable headband and leather nose-and-bridge curtain also contribute to more comfortable fit.

Ask your Willson distributor for new Kover-Mor* Cup Goggles *Trademark They offer many benefits to workers in hazardous occupations-

- improved design . . . provides snug, comfortable fit—ample room over modern large-frame prescription glasses.
- nylon eye cups . . . molded of tough lightweight nylon—strongest plastic used in goggle cups; non-flammable—and won't conduct heat.
- **standard lenses**... 50 mm. round flat Super-Tough® lenses used eliminate need to stock odd size replacement lenses—external lens retaining ring makes lens replacement quick and easy.
- extra ventilation . . . two-way ventilation is provided by slots in retaining ring and screens in eye cups.
- new lightweight comfort . . . total weight of these new goggles is practically the same as smaller "cover all" styles.

More Than 300 Safety Products



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JUNE, 1953

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271



This higher-priced alloy steel can save you money!

"B" No. 3X heat-treated bars offer many production economies, even though machined at about ¾ths the speed of annealed bars. They are supplied to your desired physical properties, and can be machined more easily than standard heat-treated bars with equivalent properties. The expense of scaling, distortion, straightening, and often grinding, are eliminated — as well as the cost of extra handling and heat treating of finished parts!

Although the cost is a little more than for ordinary annealed stock, a trial order will convince you of the true economy of HY-TEN "B" No. 3X heat-treated bars! Just call your nearest WL representative.



140 Sidney St., Cambridge 39, Mass.

and Cleveland . Chicago . Detroit Hillside, N. J. . Bulfalo . Cincinnati Scaife Company, Oakmont, Pa., has appointed Dean Wagoner, Jr. to manufacturer's representative in North and South Carolina. He will handle the sales of Scaife cylinders and aboveground tanks for LP-gas.

National Electric Products Corporation, Pittsburgh, Pa., has appointed John W. McCaughan manager of the box and fittings sales department. Mr. McCaughan, who will have his head-quarters in Pittsburgh, will actively promote the sale and delivery of National Electric's line of Redege outlet and switch boxes and box connectors.

Screw Corporation of America, New York City, has appointed David H. Comtois director of sales. Mr. Comtois



David H. Comtois

formerly was with The Corbin Screw Division of The American Hardware Corporation, as manager of standard parts.

D. J. Byrd has been appointed division assistant sales manager of Wayne Division, Gar Wood Industries, Inc., Wayne, Mich. Mr. Byrd joined Gar Wood in 1947 as a salesman with the company's Washington, D. C. branch. At the time of his present appointment, he served as Wayne Division district manager for the southeastern section of the country. In his new position, Mr. Byrd will specifically be responsible for Gar Wood's field operation.

The Delta Power Tool Division of Rockwell Manufacturing Company, Pittsburgh, has announced the adoption of a revised set-up involving the appointment of several Delta officials. Under the new system, four sales divisions have been set up at the firm's home office in Pittsburgh, each under a product manager. The four product managers are Ben Eldridge, metal working division; Thomas C. Mortimer, woodworking division; I. G. Meyer, Homecraft tools division; and A. V. Taylor, accessories division.

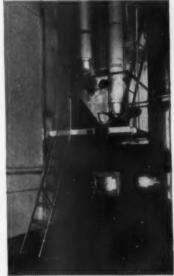
Government sales under the new plan have been put under the supervision of George Powell. John Claude will supervise sales to schools. How we save \$20,000 a year-USING COAL INSTEAD OF OIL"

LITTLE FALLS LAUNDRY, LITTLE FALLS, N. J.)

"Our laundry is one of the largest in the country," says Chief Power Plant Engineer Notte, "and, we think, one of the most progressive. Our company insists on superior performance at lowest possible cost all along the line. That's exactly why we depend on coal-fired equipment. From coal we get the daily amount of BTU's we need at a cost of \$200-to get the same BTU's from oil would cost \$280. We can change to oil on less than a day's notice-but so far we've never done it. Coal does a great job-cheaper."

The pulverizer from which coal is blown into the boiler. Before this operation, the laundry employs a conveyor belt to feed a precrusher. From there, conveyors carry the coal to the 100-ton hopper which feeds the pulverizer. Modern coal devices slash labor costs-make coal's basic economy even greater.

A section of the modern coal-fired boiler. With equipment like this it's possible to add 10% to 40% to the power derived from the same amount of coal in years past -to bring over-all boiler efficiency to 85% or more.



 Plants that use coal are in an enviable position—at the present and for the future. For they are more certain than the users of other fuels of a dependable fuel supply-at stable prices. The reasons are compelling. Of America's total fuel reserves, 92% is coal: Even today, oil is imported while this country can and does export coal. In addition—this country's mines are the most highly mechanized and efficient in the world.

To get all the great economy that coal is capable of delivering-to find out how much more efficient and dependable a job coal and the very latest coal-fired equipment can do-call in a competent consulting engineer. He'll recommend the right equipment for your specific needs. Then you'll see exactly why coal on a performance basis, on a dollars-and-cents basis . . . is your best fuel buy, by far!

BITUMINOUS COAL INSTITUTE

A Department of National Coal Association, Washington, D. C.

Louis G. Notte, Chief Power Engineer, Little Falls Laundry, Little Falls, N. J. To this plant in Little Falls 500 employees come to take care of the laundry for an es-

timated 100,000 people. And from this plant 100 trucks travel to customers across a 5,000 square-mile area! The laundry depends on coal to provide all electric power and lights-heat for all buildings steam for hydraulicallyoperated machines - steam for pressers and dryers.

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If you're running your own steam plant, here are a few down-to-earth facts you don't want to miss!

COAL in most places, is today's most econom-

COAL resources in America are adequate for all needs—for hundreds of years to come. ical fuel. COAL production in the U.S.A. is highly mechanized and by far the most efficient in the

COAL prices will therefore remain the most

COAL is the safest fuel to store and use. stable of all fuels. COAL is the fuel that American industry can count on more and more-for with modern combustion-and-handling equipment, the inherent advantages of well-prepared coal net even bigger savings.

FOR HIGH EFFICIENCY POR LOW COST YOU CAN COUNT ON COAL!

JUNE, 1953

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Backstand Belts increase production 40%!

Three operations become two—using an Armour Backstand Belt

Sanding, polishing and finishing cast aluminum motor housings were three jobs for a well-known company*, using a hard wheel and two set-up wheels. One Armour backstand belt combined the sanding and polishing operations, increasing production 40%! It outlasted 4 to 5 wheels, and gave a better finish!

Belts are only one of the many forms of

Armour coated abrasives. There are more than 30,000 different varieties in form, grit size, backing, etc., to meet your specific requirements. Your industrial distributor will tell you about this complete line. Call him today!

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Alloys and Products, Inc., New York City, has appointed George Staub sales representatives for the Metropolitan New York area. Until recently Mr. Staub was the owner of the American Marine Brass Foundry in Brooklyn. At present he is the executive secretary of the Metropolitan Brass Founders Association.

The Barber-Colman Company of Rockford, Ill., has announced the opening of a new factory branch office in Columbia, S.C. The new office, located at 537 Harden Street, will handle the sale of automatic control and air distribution products. Robert Lindsay is the branch manager.

The General Fireproofing Company, Youngstown, Ohio, has named Paul M. Wick manager of its Pittsburgh branch, succeeding J. R. Caldwell, who has retired after more than 40 years' service with the company. Mr. Wick joined GF immediately after his graduation from Yale University in 1939, and since 1952 has been assistant manager of the Pittsburgh branch. Mr. Caldwell joined the company in 1906 working in the drafting room and the estimating department until 1910. He was appointed Pittsburgh branch manager in 1933.

Samuel P. Felix has been appointed general manager of the De Laval Turbine Pacific Company, San Francisco, a wholly-owned subsidiary of De Laval Steam Turbine Company, Trenton, N. J. Mr. Felix joined De Laval as a test engineer at the Trenton plant in 1939 and later served in various production and supervisory capacities. In 1949 he was appointed superintendent of the De Laval North plant.

Warren Steam Pump Company, Inc., Warren, Mass., has appointed William J. Inwood as its sales representative for the State of Michigan. Mr. Inwood will have an office at 2970 West Grand Boulevard, Room 218, Lexington Building, Detroit 2, Mich.

Bridgeport Brass Company, Bridgeport, Conn., has announced it will open a new warehouse at 2209 South Floyd Street, Louisville, Ky. The Louisville district sales office of the company also will be in the new building.

In an exchange of posts in Continental Can Company's Metal Division, George A. Thacker has been named sales manager, Decoware, Central Division, and Donald L. Weir, district sales manager, Cincinnati.

Charles E. Balz has been appointed sales manager of Burgess Battery Company, United States Battery Division, Freeport, Ill. Mr. Balz has been assistant sales manager for the past two years, and for the previous 10 years advertising and promotion manager.

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No other fittings for pipe welding are so true to their markings as WeldELLS - so absolutely uniform, mechanically, metallurgically,

It would be bad business for us to say this if thousands of users had not already said it for us and to us. "There are no bad ones" is nearly always the foremost reason given by practical men for insisting on WeldELLS.

Pick up any WeldELL and check it against the tabulation of its size, wall thickness, and other dimensions. It will be right on the head. And it will be right on the head in plus-value features, too-features that are combined in no other fittings.

Remember that the finest line of welding fittings is also the broadest line. Coupon brings your copy of useful data described below.

A VOLUME OF USEFUL DATA ON A SINGLE SHEET—Sizes, thicknesses and dimensions of all commonly used WeldELLS and Taylor Forged Steel Flanges ingeniously condensed on a heavy durable, letter-sized card. Indispensable for piping men. Coupon brings free copy.



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Fittings and Forged Steel F	r data sheet covering Taylor Forge Welding langes.
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POSITION	
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STREET ADDRESS	
CITY	ZONE_STATE

INDUSTRIAL Developments



The Babcock & Wilcox Company, New York City, has announced the establishment of an Atomic Power Division of the company under the direction of C. H. Gay, vice president.

The company has been active in nuclear work since 1943, having been engaged in the Manhattan Project, which resulted in the development of the first atomic bomb. It played a large part in engineering work on the reactor at the Brookhaven Laboratory on Long Island, has done, and still is doing, work on the development of the "atomic engine" for the nuclear powered submarines, and is doing advance studies on the application of atomic power to large navy ships. Babcock & Wilcox is also actively associated with Detroit Edison and Chemical companies in work of applying atomic power to the generation of electricity.

Westinghouse Electric Corporation, Pittsburgh, has nearly doubled its capacity for the production of generators and large motors through an expansion program now being completed at the Transportation and Generator Division at the East Pittsburgh, Pa. works. Present generator production schedules correlate closely with the manufacture of turbines at the Westinghouse Steam Division at South Philadelphia, Pa.

Heart of the expansion is a new 100,000-square foot building that parallels the previous manufacturing aisle. Turbine generators up to about 60,000 kilowatts will continue to be built and tested in the former manufacturing areas. Larger machines, and waterwheel generators, will be machined in the former areas, but will be assembled, wound, and tested in the new building.

Coupled to the construction of the new manufacturing building have been numerous changes in the machining and fabricating sections that will feed the assembly areas. Two machining aisles have been rearranged, and new machine tools installed. An outstanding feature of the new building is its assembly pits for turbine generators. Actually large jigs, the pits will be

used for the complete assembly operation. The finished generators will be lifted into the test pits. This procedure will free test pits for their true function, since no generator assembly will take place there. The test floor apparatus includes a three-phase reactor to be used in running full-load tests on large generators

International Minerals & Chemical Corporation, Industrial Minerals Division, Chicago, has started construction on new feldspar grinding facilities at Erwin, Tenn., which will increase capacity for finely ground F-4 pottery grade flotation feldspar by about 50%. A new mica mill also has been put into production at Erwin. The mill, which will supply a growing market for finely ground mica in the rubber and paint industry, will be operated under the Newdale Mica Company, a unit in the Industrial Minerals Division's Consolidated Feldspar Department.

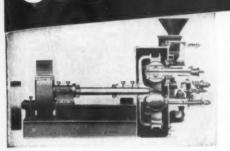
Federated Steel Corporation, Pittsburgh, has purchased the business of The Morrison-Drabner Steel Company, Inc., Cincinnati and Atlanta. The acquisition was made through two newly formed and wholly owned subsidiaries, Morrison-Drabner Steel Company, which acquired the Cincinnati operation, and Federated Steel Company (of Georgia) which acquired the Atlanta operation of the present Morrison-Drabner. Roger Morrison and Victor Drabner have joined the Federated organization in advisory capacities and will continue to be located in Cin-

The Cavert Wire Company, Ellwood City, Pa., has been taken over by new owners. The new principals are Meyer L. Swimmer and his son, Wolford Swimmer, of Uniontown, Pa. Meyer Swimmer will serve as president while his son will act as general manager. The Swimmers have operated a steel wire hanger plant in Uniontown for a number of years.



Air Reduction Sales Company's new liquid oxygen plant in Butler, Pa., which has a rated capacity of 100 tons of liquid oxygen per day. The plant has commenced delivery of oxygen by pipeline to Armco Steel Corporation and Pullman Standard Company.

Step-up Production Lower Preparation Costs with STURTEVANT EQUIPMENT



RING ROLL MILL — for medium and fine reduction of hard or soft materials (10 to 200 mesh). Open-door accessibility for easy cleaning. Available in many sizes and capacities.

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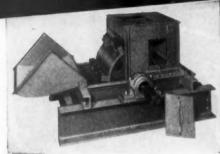
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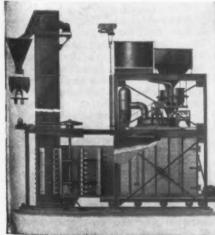
TAILINGS ROTARY PULVERIZER — increases output of fertilizer tailings . . . will not clog . . . leaves no daily accumulation of unground pellets. Capacities up to 25 tons per hour.



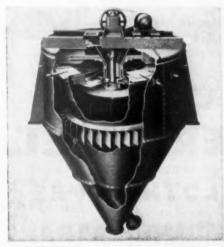
DRY BATCH MIXERS — 4-way mixing action mixes two or more ingredients into an inseparable, homogeneous mass. Open door accessibility makes cleaning easy. Capacities ½ ton to 2 tons.



MOTO-VIBRO SCREENS — screen everything screenable. Open and closed models with or without feeders. Many types and sizes . . . screens from $\frac{1}{2}$ " to 60 mesh.



DEN AND EXCAVATOR — speeds processing of superphosphates. Easily operated by two men ... produces 16 to 40 tens per batch and up to 480 tens per day of superior fertilizer free from lumps.



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Sturtevant Processing Equipment... Grinders, mixers, separators, screens, etc.... can help you reduce today's high manufacturing costs by increasing both machine and operator output, lowering production costs, assuring high quality products.

Records in all types of industries — chemical, plastics, ceramics, cement, food, construction — prove that this equipment works dependably day in, day out with little, if any, maintenance.

Used individually or linked together in proper sequence, they do the job faster and easier than other types . . . handle a larger variety of work.

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Announcing a new pressure sensitive tape, PERMACEL 691, that conforms to specification JAN-P-127, Type I, Grade B. Companion product to the well known PERMACEL 68. Equally outstanding waterproof characteristics at an economy price.

The PERMACEL Line meets all waterproof tape requirements as well as more exacting custom requirements with . . .

Top Quality at all price levels.

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CLOTH TAPES



INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.

Owens-Corning Fiberglas Corporation, Toledo, has announced that it will now sell its Kaylo heat insulating products on a national basis. Fiberglas contractors and distributors now can buy from one source incombustible rigid and flexible duct lining and insulation, incombustible rigid and flexible pipe covering for all temperatures, incombustible high and low temperature block, incombustible cold storage insulations and related incombustible

Manufacturing Corporation. Belleville, N. J. has announced completion of a second new building on the six-and-a-half-acre industrial tract of the corporation in Newark, N. J. The new building, comprising approximately 12,000 square feet of production space, will be used exclusively for precision electroplating of heavy industrial equipment being produced for Atomic Energy Commission projects.

Additional buildings totaling approximately 100,000 square feet of space are contemplated for the site where activities of all affiliated companies will eventually be consolidated.

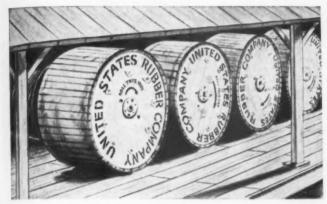
Westinghouse Electric Corporation, Pittsburgh, has gotten production of electronic tubes well underway in the two new manufacturing plants of the newly formed Westinghouse Electronic Tube Division. Located at Elmira and at nearby Bath, N. Y., the two new plants will ultimately attain volume production of a comprehensive line of electronic tubes. The line will include transmitting, industrial, and special purpose tubes for AM and FM broadcasting, industrial electronics and special applications, x-ray tubes including the new image intensifier tubes for the medical profession, receiving tubes for home radio and television sets, and the cathode-ray tubes for television home receivers.

Headquarters of the new division are located in the Elmira plant. Situated on a 114-acre tract, the plant has a total working area of 365,000 square feet. The manufacturing area is divided into three parts. The south section houses facilities for the manufacture of cathode-ray tubes and the north section houses facilities for the manufacture of higher power, special and x-ray tubes. In the center section, warehousing and shipping facilities have been provided to accommodate the large stocks and shipments of incoming raw materials and outgoing finished products. The front of the building is used for office space and the majority of laboratory sections.

The plant at Bath, approximately 40 miles from the Elmira plant, adds another 145,000 square feet of working space to the Electronic Tube Division's facilities. The site was chosen because of its favorable humidity and temperature and its low degree of dust and soot in the air. The plant is air-conditioned and the air is kept free of dust particles by the use of Preciptron elec-

trostatic air cleaners.

How to prolong the life of wire and cable by proper storage



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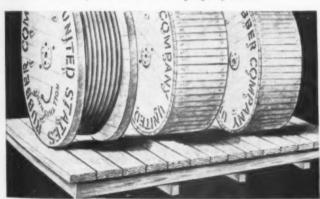
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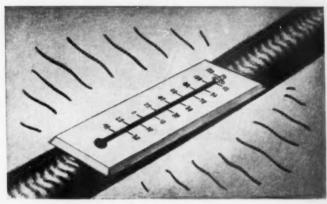
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Protect cables from the weather. Moisture is especially injurious to fibrous coverings. When stored out-of-doors, if they become wet and then freeze, they will be weakened and the saturant will flake off. In humid weather, mold growth is accelerated, weakening the covering and making it easier to damage the cable during installation. (Rubber and easier to damage the cable during installation. (Rubber and thermoplastic insulated and jacketed cables may be stored under moderately humid conditions.) The larger sizes of fibrous covered and rubber jacketed cables and all lead-sheathed rubber insulated cables must be stored on reels which must be properly lagged—or the cable must be otherwise suitably protected against mechanical damage. Reels can be stored out-of-doors if the cable is protected against sun and weather, and the ends are properly sealed.



Reels should be kept off the ground, so that moisture will not harm the cables, reel flanges and lagging. Sound reels are easier to handle and there is less chance of injury to the cable as it is removed from the reel.



Don't expose wires and cables to extremes of temperature. Chemical reactions occur at a higher rate at high temperatures than low. The greatest deterioration of low-voltage cables is due to chemical changes, oxidation or internal changes in the compound itself. Never store reels in the boiler room unless you use a fan to blow hot air away from the wires and cables. It's best to store cables at room temperatures indoors out of direct sunlight. Rubber insulated cables may be stored and handled without damage at the lowest temperatures ordinarily encountered, but thermoplastic synthetic insulated cables should not be handled at temperatures below -10 C. (14 F.)



Coils should be stored one layer deep on the floor or shelves, with the axis either horizontal or vertical. To save space, they may be stacked, but not more than 5 coils in height—otherwise there is harmful pressure on the insulation. Don't remove brown paper or box that protects against dust and light until used.

Rubber insulated fibrous covered, rubber jacketed or lead-sheathed cables in storage should never be bent to a diameter less than I.P.C.E.A. recommended diameters. Never let coils or reels drop more than a few inches. Always roll a reel in the direction indicated by the arrow on the flange. When rolling an unlagged reel, put planks under the flanges to avoid pressure on the cable. Coils, reels and spools should always be rotated when wire and cable is removed to avoid twisting the cable.

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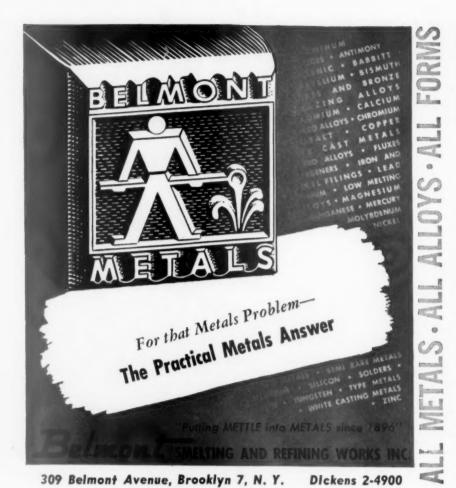
UNITED STATES RUBBER COMPANY TISRUBBER

Electrical Wire and Cable Department

ROCKEFELLER CENTER . NEW YORK 20, NEW YORK

JUNE, 1953

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Raybestos-Manhattan, Inc., Passaic, N.J., has announced the opening of a new modern rubber roll covering plant for its subsidiary, The Manhattan Rubber Manufacturing Company, at Neenah, Wis. The new high single-story plant is built specifically for precision and efficient handling of roll coverings. It is laid out for straight-line production with a modern materials handling system and specially built machinery to handle the largest size rolls.

The first official German trade directory is now available in the United States through Atlantic Service Agency, P.O. Box 415, Flushing, N.Y. The Federation of German Industrier (BDI) has compiled 30,000 headings and lists of manufacturers in the 2,000-page directory. All information is given in four languages, English, German, French and Spanish, and the book is circulated in more than 100 foreign markets.

Clark Equipment Company exhibited its startlingly new "X-70" fork-lift truck at the 5th National Materials Handling Exposition in Philadelphia, May 18-22. One of the most interesting characteristics of the "X-70" was the frame. The sides of the frame between front and rear wheels are turned under and form an oil reservoir, or sump, on one side of the truck and the fuel tank on the other. This arrangement makes for a lighter frame, which at the same time, is more rugged and which also provides exceptional accessibility to the engine compartment.

Clear access to the driver's seat from both sides of the truck is made possible since the floor board and cross-aisle are completely free of any encumbrances. The dual, pendant-type brake pedals are hung from the cowl and, since the "X-70" has an automatic transmission, there are no gear shift levers or clutch pedal.

The 7,000-lb. capacity truck features the new and exclusive "Hydratork Drive" torque converter. With this method of power transmission, torque varies automatically to compensate for load, grade or speed requirements. There is no clutch to wear out and the driver can change power from forward to reverse, or vice versa, without coming to a complete stop.

The Parker Appliance Company, Cleveland, has purchased in its entirety the JIC line of hydraulic accessories for machine tools formerly made and in process of development by the Hydraulic Division of Sundstrand Machine Tool Company, Rockford, Ill. Parker has acquired all of the pumps and valves and special hydraulic units formerly built by Sundstrand for application to machine tools. They will be augmented with additional developments already underway in Parker's Industrial Hydraulics Division in Cleveland.

The transaction does not affect Sundstrand's production of hydraulic products for other uses nor its production of oil burner fuel units.

You know he's always on the job

Come hell or high water, there are some people who simply won't be denied the privilege of doing their duty. It's just a matter of basic character, disciplined by daily diligence... and, as much as anything else, a pride in maintaining a record that has been so painstakingly built.

This is the kind of duty that Bristol Brass men understand so well. They, too, have a name for "always being on the job"... and they won't stand for the smallest nick in that name... if determination, brains and resourcefulness

can help it. And they have plenty of all three. Try Bristol Brass service on your own sheet, rod and wire needs. You may encounter two new experiences...in quality, as well as in service.

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Dexter Folder Company, Pearl River, N. Y., has acquired the supercharger business formerly owned and operated by the Pesco Division of Borg-Warner Corporation. The new activity will be known as the Miehle-Dexter Supercharger Division of Dexter Folder Company and will be located in the plant of the Christensen Machine Company, a wholly owned subsidiary of Dexter Folding Company. Hans Bohuslav has been appointed general manager of the division with headquarters at 100 Fourth Street, Racine, Wis.

The new division will engineer, manufacture and sell superchargers of all types to engine builders. A standard line of positive displacement type of blowers is now in production. In addition, special designs to suit and diesel or gas engine can be furnished and competent engineering assistance in applying superchargers to engines will be

available.

Benjamin Electric Mfg. Company, Des Plaines, Ill., has announced its purchase of certain assets of the Leader Electric Company, Chicago. The Leader Line is now being manufactured and sold by the Leader Division of the Benjamin Electric Mfg. Company. The following classifications of Leader products are included: incandescent and fluorescent commercial lighting equipment, Leaderall illuminated ceiling, Leader Troffers including incandescent boxes, Striplite units and industrial fluorescent lighting equipment.

Expansion of facilities for the manufacture of the Benjamin Company's Leader line at the Benjamin 77-acre plant in Des Plaines is being under-

taken immediately.

Adams Carbide Corporation, Harrison, N.J., is erecting a new million dollar plant for the production of tungsten carbide tools, tool tips, dies, wear parts and powder at Kenilworth, N.J. The new plant will increase production more than 50% of present capacity.

Representing the third building expansion program for the 10-year old company, the new plant will be completed in December of this year. It will be air conditioned and humified and will feature straight line production.

Cadillac Plastic Company, Detroit, has announced the formation of a Fiber Glass Division. The new affiliate will immediately occupy a 15,000 square foot steel and concrete building at John R. and Milwaukee Streets, Detroit. The plant has complete facilities for the manufacture of automotive, aircraft and allied parts from fiberglass by low-pressure molding and laminating. Two 100-ton presses, plus six other presses running from 10 to 60ton capacity, together with other equipment, are already in operation. Both match-metal die work and hand lay-up will be done. The division also will manufacture dies and fixtures for other molders and will warehouse fiber glass cloth for resale.

the most complete line of refrigeration and air conditioning products in the industry.



"Century" Asbestos Corrugated makes an ideal siding for this new inter-plant bridge and building because of its outstanding durability and freedom from maintenance. After many years this long-lived siding will still be sound, serviceable, and weather-tight.

If that's the kind of dependable siding and roofing you are seeking, you ought to know more of the many advantages in using "Century" Asbestos Corrugated. Here are a few facts about this versatile, economical material:

It is made in large, strong sheets from portland cement and asbestos fiber-therefore cannot burn, rot or rust. It is impervious to rodents and termites. It is completely, permanently weatherproof. Although it never needs paint, it will take decorative colors well.

"Century" Asbestos Corrugated has proved itself to be a maintenance-free and longlasting building material-well worth your close consideration. We shall gladly send you complete information on request.

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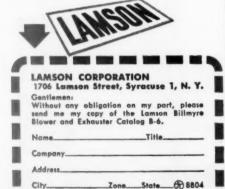


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Monsanto Chemical Company, Springfield, Mass., has announced that it will enter the field of manufacturing polyethylene plastics, making Monsanto the first company to produce the "Big Six" in plastics for molding and fabricating. The initial annual capacity of the new polyethylene plant will be about 66 million pounds and will be in production early in 1955 with a 50% increase in capacity projected for 1957. This is expected to represent nearly 20% of the total polyethylene capacity in 1957 or 22% of the forecasted market for that year. The site for the new manufacturing unit has not been announced and depends on studies underway for some time on raw material sources and the future markets for the plastic. Other plastics made by the company are styrene, phenolics, cellulosics, vinyls and aminoplasts.

Federal Electric Products Company, Newark, N.J., has announced that its new manufacturing plant now under construction in Scranton, Pa., is scheduled to begin operations in September. The \$3 million plant will consist of an ultra-modern one-story industrial structure covering 132,000 square feet, with an adjacent administration and research building of 30,000 square feet.

The plant, which will employ from 650 to 750 persons, will manufacture a line of electrical products new to Federal Electric—heavy power and transmission switch gear.

The construction of Federal Electric's Scranton plant represents one step in a long-range program of expansion and diversification of the company's facilities. New manufacturing space is now being readied for use in Cleveland and Los Angeles, and a branch plant in Dallas recently began production.

Industrial Equipment Company, Chicago, has changed its company name to Industrial Crane & Hoist Corporation. The change was made to better identify the firm with the cranes, runways and hoists it engineers, manufactures and sells.

W. B. Connor Engineering Corporation, Danbury, Conn., has shortened its corporate name to Connor Engineering Corporation.

The Leake Engineering Company, Monroe, Mich., has been organized in the metal stamping field and will operate as an entirely separate unit from The Leake Stamping Company of that city. A complete service from the inception of an idea through every phase of production to the ultimate product, or any separate phase thereof, will be provided by the new company. It includes product design, conversion, development and estimating stamping and die costs, die design and consulting services.

It will also supervise the placement of stampings or dies and their tryout when desired. Inquiries many now be sent to the Leake Engineering Company, P. O. Box 715, Monroe, Mich.





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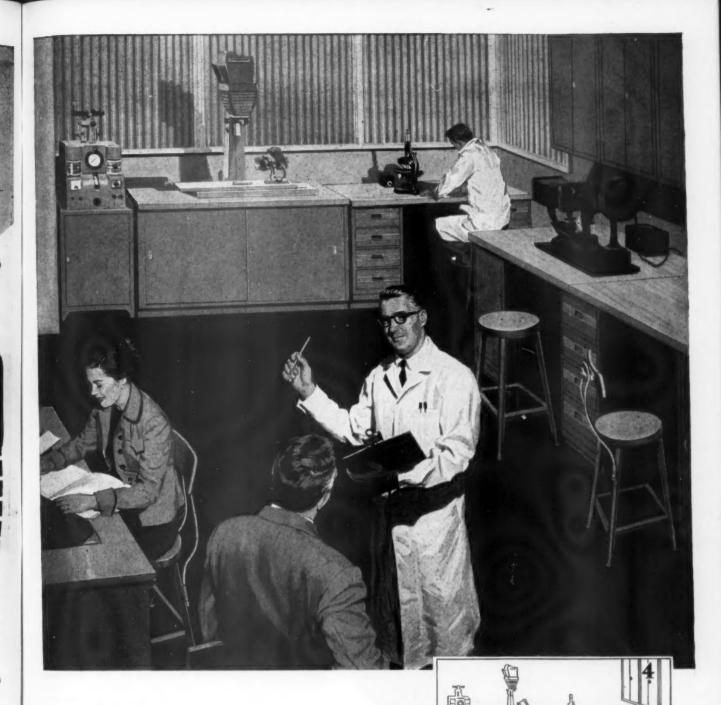
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* SERVING AMERICAN INDUSTRY SINCE 1834 *

Round Chain Company of Canada has been established by a group of 11 affiliated companies throughout the United States. Covering 12,000 square feet, the new chain-making facilities are located in Brampton, Ontario, 27 miles west of Toronto. They will make available to Canadian consumers all products manufactured and distributed by Round Chain Companies. Tire chain production will begin immediately in the Canadian plant, while production of other types of commercial and industrial chain will begin as soon as additional equipment can be installed.

Multipack, Incorporated, Elmore, Ohio, has announced the purchase of the Multiplex Machinery Company, Elmore, Ohio, which will become a subsidiary division of the new corporation. Multiplex Machinery Company will continue to manufacture its standard lines of fully automatic concrete block machines, mixers, off-bearers, skip hoists and elevators. The new management reports that current production and sales facilities are being expanded.

The Ilg Electric Ventilating Company, Chicago, has announced plans for the ninth addition to its plant at Crawford Avenue and George Street, Chicago. The new addition, incorporating the very latest in movable partitions, industrial lighting and buses for power, will provide a total space of 140,000 square feet in the main building and additional manufacturing, research and storage space in the other buildings of approximately 35,000 square feet. When the new addition is completed, the total plant space will be approximately 210,000 square feet.

The new addition will give increased space for office and engineering department, as well as increased production space. A new receiving department, with loading dock will provide for increased facilities for handling very large trucks.

Central States Engineering Corporation and Ace Tool & Die Company, both Detroit, have announced a joint service to design and build machinery and supporting tooling for cost-reducing, automatic manufacturing opera-

Under the joint responsibility the design work will be handled by Central States and the manufacturing of equipment will be done by Ace.

Joy Manufacturing Company, Pittsburgh, has acquired Barnes and Reincke, Inc., Chicago engineering company. Barnes and Reincke, which is located at 230 E. Ohio Street, Chicago, will continue to operate under its present name and with its present personnel as a subsidiary of Joy.

The Buda Company, Harvey, Ill., has just completed new plant facilities to increase production of its line of fork lift trucks. The new facilities will step up deliveries to double the present rate.

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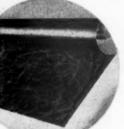
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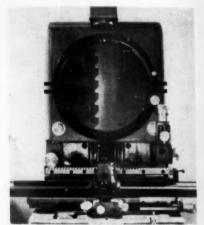
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and UU-P-271-B.

New Method Cuts Inspection And Gaging Costs

According to Optical Gaging Products Inc., 26 Forbes St., Rochester 1, N. Y., a unique application of the relatively new science of optical gaging makes it possible to check all teeth of broaches for tooth form, spacing, and wear for the entire length of a broach. Utilizing the unusual design of the optical system of the Kodak contour projector with its watt surface illuminator, broaches themselves can now be gaged optically as well as the prod-



mirrors and vertical light beam silhouette of tooth form.

The optical system of the Kodak contour projector permits light to emanate from a high intensity light source located within the cabinet containing the optical system. By means of a telecentric mirror, rays from the light source pour out of the same optical system as is used for projecting the image of the part onto the view screen. A 45° mirror attachment bends the light coming from within in any direction required. As it strikes the part held in the focal plane, the image of this part is reflected back through the same optical system on to the viewing screen. This image on the viewing screen is magnified 10, 20, 31.25, 50, 62.5, or 100 times as desired.

The contours of the teeth are checked against precision made lines on the chart-gage and any deviation of tooth profile to the master chart gage lines are readily noted and can be measured. Thus, another wide application of optical gaging is now available to manufacturers and users of broaches, cutting inspection and gaging costs.

SEE CLASSIFIED SECTION PAGE 334



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Comprehensive data detailing applications emphasizing the reliability, strength and versatility of steel castings as an engineering material. used in more than 10 vital industries, is being made available in booklet form by Steel Founders' Society of America. Reprinted in manual format, the 16-page illustrated booklet, Carbon and Low Alloy Steel Castings, incorporates much essential data of value to the purchasing department, the materials engineer, the design and production departments and others active in design, processing and specifications categories.

Included in the manual is definitive material covering steel casting properties, specifications, designs, jolting, heat treating, and inspection procedures. Free copies may be had from Steel Founders' Society of America, 920 Midland Building,

Cleveland 15, Ohio.

Extending Operating Life Of Lubricants

Recent studies by the laboratory of the Office of Naval Research have shown that it is possible to extend the "shelf life" and operating life of many greases and oils containing soaps as gelling agents. Various tests and investigations proved that a variety of silicone fluids and silicone-containing compounds were effective in preventing the oxidation of synthetic diester greases at test temperatures of 200 F.

Booklet Gives Data On Liquid Phenolic Casting Resin

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A 16-page booklet on liquid phenolic casting resin used for short-run production, model or prototype work, foundry patterns, jigs and fixtures, novelty castings, electro-plating shields, large part production, masking fixtures, special electrical and corrosion resistant parts is now available. It is a technical discussion with instructions for use of a material known as Durez 7421A. This thermosetting resin in liquid form can be cast in simple molds and requires only a short baking cycle at 140°F. Copies of the booklet may be obtained from Rezolin, Inc., 5736 West 96th Street, Los Angeles 45, California, or Durez Plastics & Chemicals, Inc., Walck Road, North Tonawanda, New York.

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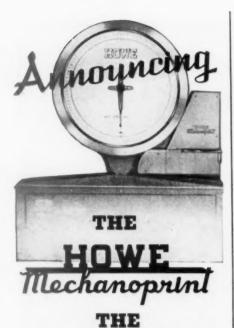
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Purchasing Production, Sales **Cooperation Called Necessary** For Effective Control

Production control is essentially a state of mind, not an over-abundance of routines, procedures and forms, W. W. Gilmore, president of the Micro Division of Minneapolis-Honeywell Regulator Company, recently advised executives attending the American Management Association's national manufacturing conference here.

Gilmore said that this state of mind, starting with top manage-ment, means "a healthy respect for scheduled dates and care to see that dates are not set that can't be met. For this industry needs just enough production control to do the job without frills." He recommended that management eliminate excessive forms and procedures that do not help meet scheduled dates.

To make an effective production control system according to Mr. Gilmore, the purchasing, production, and sales departments all must cooperate. These three departments are not "three kingdoms which function separately and on their own whims. They are part of an over-all plan and must operate as a team."

The five main steps in production control, according to the Freeport (Illinois) executive are:

1. Enough raw material in the plant to govern production, based on the amount of flow time available for replacement of parts.

2. A set of books that tells accurately how many parts are available at all times to meet production requirements.

3. Enough parts on order and scheduled in to replace all inventories as used.

4. Departmental scheduling according to machines and personnel so that dates may be established as to when parts are needed in the next department.

5. Assembly scheduling on a manhour-per-unit basis which permits shipping schedules to be met on time.

Forms must be designed to meet the customer's own needs, Gilmore declared, because operating conditions of different plants in different localities vary. "There is no group of forms which will be everything to everybody," he emphasized. The job of individualizing forms to fit a particular business is not difficult, if you bear in mind that the simpler you can keep any form or routine the more effective it will be.



See our Catalogs in Sweet's Files for Product Designers and Mechanical Industries.

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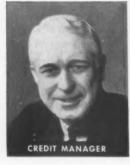


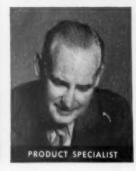


















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Booklet On Quality Report Interprets Frequency **Distributions**

A new 12-page booklet, "the Quality Report and its advantages", just published by the Hunter Spring Company of Lansdale, Pa., discusses the Quality Report, its interpretation and value to users of springs and other manufactured products. Written in a clear, brief style for engineers and purchasing agents as well as for inspectors, the handy booklet is divided into eight sections covering such subjects as "Types of Inspection" and "How to Use a Quality Report".

A Quality Report is a frequency distribution of the critical characteristics of a product, prepared during final inspection by the manu-facturer and delivered to the user with each shipment as graphic verification of conformance to specifications. The booklet describes the preparation of a frequency distribution in variables inspection by either the user or manufacturer. A section called "Interpreting the Quality Report", gives fifteen typical frequency distributions and states for each what product condition it represents and what action is indicated. Single copies may be obtained by writing on company letterhead to Hunter Spring Company, Lansdale, Pa.

Information Offered On Dishwashing Compounds

Buyers for industrial cafeterias, hotels, public institutions, etc., will be interested in a brochure published by the Hospital Bureau of Standards and Supplies Inc., 247 Park Ave., New York 17, N. Y., giving information as to the nature of the detergent process, and what dishwashing compounds are supposed to do.

The brochure describes what constitutes a good dishwashing compound (which should be made up of more than one substance, since there is no one detergent that can carry out all the processes involved in washing dishes). It also gives instructions as to how the dishes are to be prepared for washing, how the washing compound should be fed most effectively into the dishwashing machine, how to adjust for hardness of the water and many other matters that transform the commonplace art of dishwashing into the semblance of an exact science.

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VITROHM Rheostat with 6 exclusive features

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1 Pressed steel base plate assures a sturdy, lightweight rheostat base. The black japanned finish is corrosion resistant.

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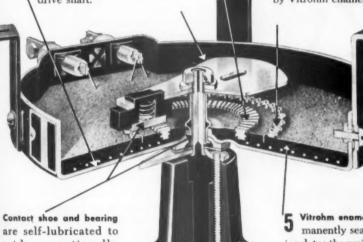
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3 Solid brass rectangular contacts provide more steps of control for any given plate diameter.

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6 Contact shoe and bearing are self-lubricated to provide exceptionally smooth control and low operating torque.

5 Vitrohm enomel permanently seals and insulates the resistance element, stationary contacts and collector ring.

This new line of Vitrohm Pressed Steel Rheostats incorporates 21 advanced design features, including the 6 shown here. They are designed for a wide variety of industrial applications to furnish smoother operation, lower operating torque, longer life, and more control steps. From raw materials to finished product, close control over workmanship and inspection of every component is constantly maintained. These are the most dependable and economical rheostats ever made by Ward Leonard - the leader in rheostat manufacture for over fifty years.

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the right combination counts in grinding wheels too!







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Division of Simonds Saw and Steel Co., Fitchburg, Mass. Other Simonds Companies: Simonds Steel Mills, Lock-port, N. Y., Simonds Canada Saw Co., Ltd., Montreal, Que. and Simonds Canada Abrasive Co. Ltd., Arvida, Que.

Carborundum Announces Simplified Pricing System

The Carborundum Company is introducing a new simplified pricing system for grinding wheels that will be a boon to its customers and distributors and to the industry according to an announcement by Major General Clinton F. Robinson, president of the firm in Niagara Falls, N Y.

Robinson said that vice president F. J. Tone Jr. and Carborundum's Executive Sales Management had collaborated for the past eighteen months with the company's twelveman Distributor Advisory Board to devise a simple workable system that would enable customers, distributors and salesmen to price grinding wheels with speed and accuracy hitherto impossible. The extent of the simplification is indicated by the fact that the previous catalog of 114 pages of list prices, discounts, etc. has been reduced to 32 pages.

Pricing of grinding wheels has been an extraordinarily difficult problem because wheels vary in kinds of abrasive grains, sizes of grain, kind of bonds, sizes of wheels from ½ inch to 60 inch diameter, paper thin to 50 inch thickness, and shapes ranging from straight wheels to dishes, saucers, flaring cups, cones, plugs, etc. Although the industry has long endeavored to standardize, it still remains that "standard" types of wheels range in the tens of thousands. How to price this multitude of sizes, kinds, and shapes has been a continuing problem of the grinding wheel industry.

Cast

The company spot checked the new pricing system with representative customers and response was most favorable. Carborundum's new grinding wheel pricing system provides (1) Basic prices, ordering quantities and discounts, all shown on the same page. (2) Elimination of price additions covering special wheels such as dishes, saucers, flaring cups, special faces, cones, plugs, etsc. Definite, basic prices are shown for these shapes and many others. (3) Practically all wheels used by an industry can now be priced with a single discount. If the order is for untreated wheels in the "A" quantity shown in the new price book, the basic price is "net" and no discount is necessary. (4) Previous complicated rules for computing prices are now obsolete.

Carborundum's new, basic prices apply to all orders dated on or after June 15, 1953. Any order dated

(Please turn to page 298)





REPAIR CHAINS BETTER

"MISSING LINKS"

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Made with special dies so that each half is pressure fitted. This eliminates play between the forgings, insures perfect fit when riveted into chain. There is no strain on the rivets.

INTERLOCKING LUGS

More costly to put in the dies, but they grip firmer and really do the work of taking the load.

ORDINARY LINKS

UNMATCHED

When loose fitting links are put into a chain and the load is applied, the rivets take most of the strain and tend to shear until the links set. This may later cause the link to open up under heavy load.

ROUND LUGS

Ordinary round lugs fitting into round holes don't have the holding power, tend to shear or force out under strain.

Laughlin "Missing Links" are made of carefully heat treated, high grade steel. They have features found in no other repair links, and are also supplied in an exclusive pear shaped design in sizes for 3/8" to 11/8" chain.

Buy From Your Local Distributor

He is in business to give you prompt, courteous service and to save you money, time and trouble. He's your one best source for industrial supplies.

FOR SAFETY'S SAKE

SAY

THE THOMAS LAUGHLIN CO. 64 Fore St., Portland, Me.



* T. M. Reg.

(Continued from page 296) prior to June 15th will be billed at either the old or new price, whichever is lower. Prices of certain lines of wheels have been substantially reduced, others are somewhat lower and some are slightly higher. The purpose of the new system is not to raise or to lower prices but is to simplify pricing method according to the announcement. Carborundum believes that a grinding wheel user, after having examined the new price book, will readily be able to price practically any type of grinding wheel in which he is interested.

Steel Mill Fabricates Parts From Leftover Trimmings

One of the nation's steel mills has a "cookie-cutting" service that uses the leftover trimmings from freshly rolled steel plates, much as a housewife utilizes the dough trimmed from pie plates.

Originally such excess material, including plate ends known as "fishtails" and side trimmings known as "offal," were simply charged back into the furnace as scrap. So successful has the fabrication of finished parts from trimmings become that such work forms 30% of the business done by the steel plant, according to Steelways, magazine of American Iron & Steel Institute.

Steel manufacturers do not normally fabricate materials, but instead supply customers with plates, bar stock, pipe or other forms of steel that require finishing at the customer's plant. Consequently the "cookie-cutting" operation was at first just a shearing machine in a corner of one of the mill buildings.

"Today," the magazine says, "employes of the fabrication service number some 800, including 75 on the office staff." The company has 150 machines to cut, press, bend and punch steel plate and do everything else "except tie it in knots." Any of the five buildings used to house the machines resemble "the armory of some medieval giant."

Steelways says the resultant savings not only help the company's balance sheets but cut customers' costs. "If a customer were to buy a square plate and cut a circle out of it himself, he would pay freight on the leftover scrap and then pay again when it's shipped back to the mill. He'd also pay for the cost of cutting the shape."

By ordering the circle cut at the mill, he pays freight only on the finished part. In many cases he can have a steel shape delivered at less cost than the blank plate from which the shape would be cut.

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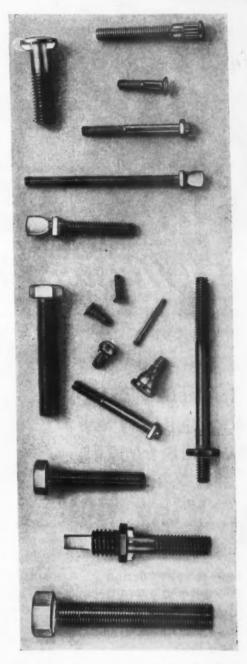
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Bridgeport Silicon Bronze #609 is used for many hundreds of engineering applications and for outdoor construction where the threat of corrosion exists, such as:

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If you have not tried Silicon Bronze #609, write for Bridgeport's Duronze Manual and get in touch with the nearest Bridgeport District Office. Our Technical Department will be glad to explain how Silicon Bronze #609 will help to improve your product and also reduce your manufacturing costs.



Cold headed and roll threaded fastenings made from Silicon Bronze #609 are dependable in service and economical to fabricate.

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A new exclusive design principle guarantees

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The new Lansing "Dean," by eliminating the King Bolt (or center pin) has eliminated the major cause of caster failure and permits faster movement and greater loads. The new design principle employs a swivel plate that floats within a single bearing assembly arranged to carry both radial and thrust loads from all directions. Moisture (even if completely immersed) and other foreign matter are kept out and grease kept in the swivel bearing by a special sealing arrangement.



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Color-Sound Film Explains Electrostatic Painting

Under the title, Miracles in Painting, Ransburg Electro-Coating Corp., Barth & Sanders Ave., Indianapolis 7, Ind., has available on request a new 25 minute, 16-mm, industrial color-sound film explaining the Ransburg No. 2 process of electrostatic painting and showing many production line applications.

Following a brief history of painting methods, from the brush to the spray gun, the film explains the new electrostatic spray atomizer. This is an all-electric, airless system—no compressed air is used—the paint being atomized by electrostatic force. Advantages of the process are proved by actual case history style of presentation, with over half of the shooting being done on customers' production line. Job after job is shown where spray booths have been replaced by this automatic system.

In case history fashion, the film shows how finishing costs—including labor and materials—are substantially decreased while production is increased and a higher quality of work results with the various electrostatic processes.

ATTENTION:

Plant Safety Engineers
Here's How YOU can Prevent

Here's How YOU can Prevent Production Losses Caused by Dermatitis . . .

Reduce Medical Costs and Improve Industrial Relations

Dermatitis actually wastes *more* man hours and medical treatment dollars than the more sensational industrial "accidents".* Furthermore, dermatitis cases cause revulsion, not only among afflicted employees, but their co-workers as well.

You can prevent these distasteful situations by providing the *proper* protective garments and *insisting* that personnel in your plant always wear them when in contact with irritating substances.

Gloves are especially important in reducing dermatitis cases and your production managers will thank you for choosing the *right* gloves for each job. Comfortable fit, hand freedom and long wear pay off in employee good will, increased production and lowered operating costs.

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PIONEER liquid-tight Stanzoil® gloves, made of oil and acid resistant non-allergic DuPont milled neoprene, are reducing hand dermatitis hazards in hundreds of plants all over the world. 32 safety styles, weights, size and colors . . . PIONEER catalog shows you at a glance how to choose the most efficient and economical glove for the job. Don't risk costly time out — write for complete information today.

*Occupational Hazards, December, 1952 Industrial Products Division

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Quality Gloves for 35 Years

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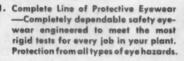
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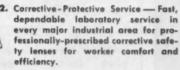
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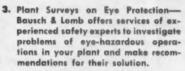
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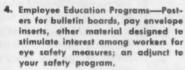
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Leadership in Optical Science—For 100 years Bausch & Lomb has been a leader in research and development of products to serve better the optical and visual needs of mankind. All industry is profiting today from this knowledge and experience.

• Authorities say that 98% of accidents in industry are avoidable. Yet, in spite of great strides being made in reducing them, industry's annual accident toll is staggering.

The nub of the problem is the worker. Sell bim on eye safety and you're a long way toward success. Let Bausch & Lomb help with forceful messages tailored into bulletin board posters, pay envelope inserts, other material that sells the worker on a desire to use the proper safety eyewear, the desire to comply with the rules of your safety program.

Call in your Bausch & Lomb optical distributor. He's well qualified to assist with this—or any other phase of your continuing eye safety program. Or write Bausch & Lomb Optical Company, 90618 Smith St., Rochester, N. Y. Remember always, Bausch & Lomb is your best source for completely dependable safety eyewear engineered to meet the most rigid tests for every job in your plant.







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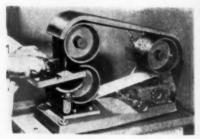
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EASTERN SALES OFFICE . 121 NO. BROAD STREET, PHILADELPHIA 7, PA.

New Method Solves Problems in Sharpening Carbide Tools

A new method for final finishing of carbide tools—solving a major sharpening problem—is being introduced by Minnesota Mining and Manufacturing Co., and Hammond Machinery Builders.

Based on the use of low-cost abrasive paper belts and a new type belt machine, it will make possible greatly expanded use of carbide cutting tools throughout the metalworking, woodworking, and plastic industries.

Major significance of the new method is that it simplifies the job of carbide tool sharpening and reduces over-all costs—yet produces a tool edge better than that obtained in most plants over the country today.



New sharpening machine

The new method is intended to supplement, and in many cases, replace the conventional diamond wheel method—especially where the initial cost of diamond wheels is prohibitive.

Furthermore where skilled diamond wheel operators are not available and standard shop practice in tool sharpening is unsatisfactory, the simplicity and effectiveness of the new method produces a better finish on the tool resulting in longer tool life.

The new abrasive belt machine obsoletes existing finishing machines using belts because it is now possible to finish the flat top of the tool—an often neglected area that is considered essential for maximum tool mileage and finish.

A two-step tool sharpening technique is employed: (1) rough grinding on a standard grit 60 silicon carbide wheel, and (2) finishing the sides and top of the carbide tip on the belt machine using a "Tri-M-Ite" Resinite abrasive belt ranging from grit 60 to 150 depending on the edge required. A 1/16-inch-wide land is finished from the cutting edge down. This land

(Please turn to page 304)

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"Waukesha Metal" is a high nickel alloy - closegrained with excellent corrosion-resistant qualities. Waukesha Foundry produces castings in "Waukesha Metals" in a wide range of alloys -

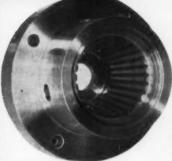
• for contact with over 100 foods, beverages, chemicals, pharmaceuticals and other products possessing corrosive characteristics.

(ZINC CHLORIDE)

- for bearing applications in equipment requiring sliding or rotational metal-to-metal contact without seizing or galling of corrosion resistant parts.
- for free-machining and for high polish surfacing.

Castings in "WAUKESHA METAL" are so widely used that WAUKESHA is the largest nickel alloy jobbing foundry in the country. As just one example of the industrial acceptance of "WAUKESHA METAL" - virtually all of the milk you drink and all of the ice cream you eat has passed over a "WAUKESHA METAL" casting in processing.









Available in the 300-400 series . . . in extra low carbon and in the 35-15 and 25-12 high alloy series, WAUKESHA offers Stainless Steel Castings that are produced under strict metallurgical laboratory control for close texture, uniformity and dimensional correctness.

Two Booklets Available

- One booklet on physical properties, chemical specifications and application recommendations of "Waukesha Metals."
- The other booklet on WAUKESHA Stainless Steel Castings describing their metallurgical characteristics and application recommendations.
- A postcard or the convenient coupon below will bring either booklet - or both. And, of course, without obligation.



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Please send me your booklet about "Waukesha Metals" which describes their properties and suggested applications. Please send your descriptive booklet
— Waukesha Stainless Steel Castings.

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657 I



Acid etching inks, used for permanent stamping on metal and all non-porous surfaces will eat away at rubber. Vinylite resists this action — gives longer life by far!

ENGRAVED VINYLITE STAMPING GIVES RAZOR-SHARP IMPRESSIONS EVERY TIME

Heavy base inks will clog shallow rubber stamp faces rapidly. Our deepmolded engraved VINYLITE stamp faces have more than three times the depth of ordinary rubber stamps. Markings always remain super sharp . . . an important advantage since this mark is a permanent record of your inspector's approval.

VINYLITE HAS CUSHION-LIKE RESILIENCE

Our VINYLITE molding process includes a timed curing that imparts to this versatile plastic all the elasticity of rubber. Resilient VINYLITE resists abrasive action, conforms to irregular surfaces . . . and lasts much longer!

BEST OF ALL
VINYLITE
IS ADAPTABLE
TO ANY
MARKING
DEVICE!

We recommend the following for standard inspection procedures:



HOW ABOUT DELIVERY?

We work fast! Any design duplicated, affixed permanently to the stamping device your procedure requires, (or we'll recommend and/or design one).

For FREE samples and Full Information use this coupon

	NGEL MANUFACTURING (Fulton St., New York, N.	
	Please send the following FREE Vinylite Sample & Price List	Please have salesman call for appointment
3	COMPANY	COLUMN TO THE PARTY AND ASSOCIATE THE PARTY AND ASSOCIATE AND ASSOCIATE AND ASSOCIATE
2	CITY	ZONE

(Continued from page 302) is at the desired clearance angle and is flat, not hollow ground.

The new unit—designed jointly by the 3M and Hammond Companies is known as the Carbide Belt Finisher Model 454 and is manufactured and sold by Hammond Machinery Builders.

Reports Half Of U. S. Families Worth More Than \$7.500

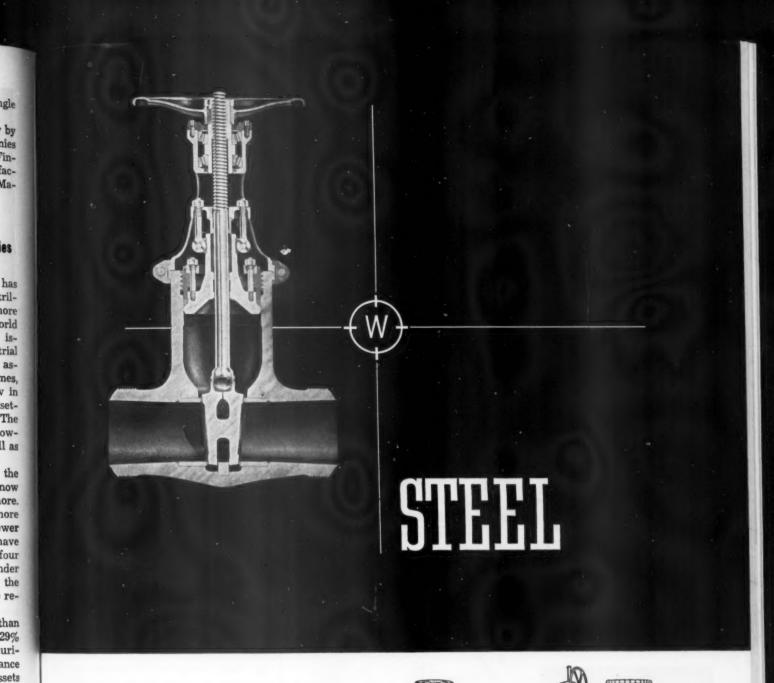
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Consumer wealth in the U. S. has risen above three quarters of a trillion dollars—an increase of more than 50% since the end of World War II—according to a report issued by the National Industrial Conference Board. Consumers' asset holdings (cash, insurance, homes, business interests, etc.) are now in excess of \$800 billion, with offsetting debts about \$100 billion. The postwar rise in asset values, however, reflects rising prices as well as a growth in real wealth.

The Board found that half of the families in the United States now have a net worth of \$7,500 or more. A sixth of all families own more than \$30,000 in net assets. Fewer than a tenth of all families have more debts than assets. The four fifths of all families who earn under \$5,000 a year own nearly half the nation's wealth, according to the report.

NICB found that of the more than \$800 billion of consumer assets, 29% is in liquid form (cash and securities) and another 6% in insurance equities. The rest is in "fixed" assets -roughly half in personal assets, and half in business investments. Owned homes have a market value in excess of \$200 billion; homeowners' actual equities (after subtracting mortgages) amount to about \$150 billion. Family automobiles are valued at about \$40 billion, or at \$35 billion after instalment debts against the vehicles are substracted. Television and radio sets, refrigerators, freezers and the like add another \$15 billion (before debts).

Among business investments, real-estate holdings are the biggest items. The report revealed that real-estate assets total more than \$100 billion, and are spread among nearly a sixth of all families. Business assets of farm owner-operators were close behind. Equity in unincorporated businesses and privately held corporations totaled about \$65 billion.

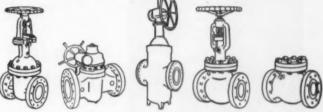


COMPLETE LINES OF CAST STEEL VALVES AND PIPE FITTINGS are manufactured by Walworth in a variety of pressure classes, types, sizes, and patterns for general industrial use. Walworth also manufactures cast steel valves for specific service applications.

Walworth produces steel bar stock valves, and cast steel valves made of carbon steel, carbon molybdenum steel, corrosion-resistant, and heat-resistant alloy steels. Included are gate, globe, angle, check, and lubricated plug types. Sizes range from ½ to 30 inches; pressures range up to 5,000 psi. Full information is contained in Walworth General Catalog 52, a copy of which will be forwarded if requested on business letterhead.

Walworth also manufactures complete lines of valves and fittings made of bronze, iron, and special alloys as well as steel. Walworth-made valves, fittings, and pipe wrenches total approximately 50,000 items.

Walworth engineers will be glad to help you with your problems. For full information, call your local Walworth distributor, nearest Walworth sales office, or write to Walworth Company, General Offices, 60 East 42nd Street, New York 17, New York.



Illustrated in section is an 8-inch Series 900, Walworth Pressure-Seal Cast Steel Gate Valve designed for high-pressure, high-temperature service. Pressure-Seal Valves are available in Series 600, 900, 1500 and 2500; sizes 1 to 16 inches. Small Cast Steel Valves, Series 1500, in angle and Y-globe types, are also available in sizes ranging from ½ to 2 inches.

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Manufacturers since 1842

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GET THOSE WEED ROOTS!

PROBLEM WITH THESE DOLGE PRODUCTS



To keep weeds off drives, walks, parking lots, tennis courts, sand traps you've got to finish the roots.

DOLGE SS WEED-KILLER does that—and more. It kills the foliage, of course. It works down deep. It tends to sterilize the soil so that wind-blown seeds cannot sprout in it. Diluted as directed, it can kill the toughest weeds. Spray or sprinkle where you want no growth whatsoever.

E.W.T. is the Dolge 2,4-D Selective Weed-Killer. It finishes dandelions, plantain and other broad-leaved weeds in turf—does

not harm good lawn grasses. It translocates; is absorbed and travels through the sap to the roots.

See your Dolge Service Man—he will call soon.

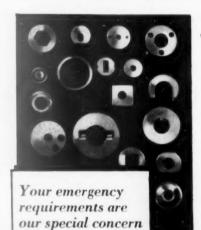
Write for the Dolge booklet on chemical weed control.

SANITARY SURVEY
of your premises
consult your
DOLGE SERVICE MAN



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A heap good source you shouldn't forget—standard and specials from Joliet! Thousands of special dies in many shapes and forms, 9/32" to 8" O.D., gauges No. 28 to 3/6". A variety of finishes available to meet your special needs, including: Electro-plating, Galvanizing, Parkerizing and Cyanide hardening. A dependable supplier for 39 years.

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FOR QUALITY AND SERVICE

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To Push U. S. Market For Canadian Primary Aluminum

A continuing effort to cultivate the American market for Canadian primary aluminum will be carried forward because Canada is a natural supplier "for reasons which are basic", Nathanael V. Davis, President of Aluminum Limited recently told the annual meeting of the company share-holders.

Mr. Davis said that sales of Canadian primary aluminum to commercial consumers in the United States have shown "substantial and gratifying increases" in recent years, rising from an average of 19,000 tons per year in 1946 and 1947 to an annual average of 112,000 tons during the past three

Attributing the sales growth in the United States partly to the strong demand existing during the major portion of the post-war period and partly to expanded sales forces and sales offices in the United States, Mr. Davis said that sales of primary aluminum have been directed to all fabricators of the metal "whether they be independent fabricators or fabricators and producers as well."

Mr. Davis said "the three American producers own and operate a very substantial portion of the total fabricating facilities in the American market. Taking the group as a whole, the amount of primary aluminum required to operate at capacity the fabricating facilities of the three integrated producers has exceeded and may continue to exceed the quantity of primary aluminum available to them from their own production sources. In consequence, the producers have been, and may continue to be, buyers of ingot. Aluminum Limited has devoted a major part of its efforts however to supplying the independent fabricators of ingot".

"Although the capacity of the plants owned by the independent fabricators is not so large as the capacity owned by the three established U. S. producers, our first aim has been to supply the independent fabricators with their primary aluminum requirements. I believe it would be fair to say", Mr. Davis stated, "that Canadian primary aluminum has proved a vital source of supply to many U. S. independent fabricators and has thereby provided them with the means of steady employment during

(Please turn to page 308)



Nitrogen, with all the advantages of air without its harmful effect, is blown into "precured sheets" of rubber under a pressure of 5,000 p. s. i., to give RUBATEX its unique, very low density, closed cellular structure that shuts out oxygen, dust, moisture, and acts as a barrier against temperature extremes.

These millions of permanently sealed nitrogen bubbles give RUBATEX a superior lead over sponge and other soft rubber materials with open interlinked cells that are exposed to oxygen, the "bugaboo" of rubber.

In contrast, too, RUBATEX has uniform resiliency and a tight structure which deadens sound and isolates vibration. RUBATEX is soft, pliable, and easy to work with - light in weight and will outlast many years other soft rubber products.

For maximum efficiency of your product - check the superior advantages of RUBATEX first!

- Lamp gaskets
- · Heater core gaskets
- · Cowl gaskets
- · Window gaskets
- · Fuel cell cushions
- · Floor mats
- Anti-squeak pads

CONSTRUCTION

- · Expansion joint seals
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INDUSTRIAL

- · Instrument gaskets
- · Fatigue mats
- · Low temperature insulation
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- · Gasketing
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cushion for fragile goods and delicate scientific instruments.

REFRIGERATION - Gasketing for refrigerator and cold storage room doors.

SPORTING GOODS - "Air cushioning" padding for athletic equipment and apparel.

CONSUMER & HOUSEHOLD **PRODUCTS**

- · Shoe innersoles
- · Hearing aid "cushioning"
- Appliance gaskets
- · Bath and kitchen mats

Send us details of your proposed applications and let us send you samples and recommendations, Write Dept P-6, Great American Industries, Inc., Rubatex Division, Bedford, Virginia.

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Crosley's "Shelvador" refrigerator line, twice awarded the Fashion Academy Gold Medal for advanced styling, adds to its laurels with this beautiful "Twin Automatic." A medal for smart production engineering might well be awarded too, for Crosley incorporates the use of efficiently designed Riverside electrical components that can be installed quickly, easily, and inexpensively!

We deliver these sub-assemblies completely fabricated, ready for installation. Thus, along with assembly savings, Crosley avoids upkeep of the specialized facilities required to produce such electrical components, a considerable saving in itself.

The design and production of wiring assemblies is a highly specialized business . . . and a Riverside specialty! Our Engineering Department is devoted solely to solving wiring problems . . . while specialized production equipment and skilled personnel translate its recommendations into efficient, economical "packaged wiring." It will pay you to send prints or details of your product wiring problem for design suggestions and a firm quotation. There is no obligation.

Your source file needs this new brochure! Shows wiring harnesses, cord sets, waterproof switches and other specialties. Describes engineering service and production facilities. Send for your free copy now!



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CORDS • ELECTRICAL SWITCHES • RELAYS • MOLDED RUBBER PRODUCTS

(Continued from page 306)
the past few years when domestic
sources have been inadequate to
meet the combined commercial and
defense demands in the United
States".

Aluminum Markets to Remain Strong, Reynolds Predicts

"Aluminum markets are expected to stay strong through the rest of 1953. The company's expanded facilities are operating at peak and forward business is at very high the annual stockholders levels." meeting of Reynolds Metals Company was told recently by R. S. Reynolds, Jr., president of the company. "Should there be any drop in military consumption, I am confident that the additional aluminum supply thus made available would be promptly taken up by civilian customers," Mr. Reynolds said.

"The industry's primary aluminum production," Mr. Reynolds declared, "continues to set new records as a result of the rapidity with which Reynolds Metals and the other producers expanded their capacity since Korea. During the first quarter of this year production was 27% greater than last year and also in excess of the record quarter during World War II.

"The most notable feature of this rapidly mounting production is the widespread diversification among the consuming industries. When this country last attained a similar level of aluminum production, during the war year 1943, about 80% of it went into military aircraft. Now the military share of the total runs to 25 or 30% and of that probably no more than half goes into military aircraft.

The other 70% is being fanned out to almost the whole range of civilian industry, including such big consumers as the construction, automotive, electrical, appliance and packaging industries. This general acceptance by industry of aluminum as a major basic metal, second only to steel now, provides greater stability for aluminum markets and stimulates their further growth.

"The outlook for aluminum continues to be bright, in our opinion, and we look forward during the months and years ahead to new opportunities for enlarging our markets and sales, especially as aluminum supplies not actually needed for defense are made available for civilian use."

Summer your slack season?

A good time to get factory service for your Black & Decker Tools!



34 B&D Branches within 24 hours of any customer!

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... use them to save time, trouble, money!

F you have B&D Tools that are not performing up to par, now's a good time to restore their original power, speed and accuracy. It's the right time, too, for money-saving preventive maintenance on all tools that have seen yearround hard service. In either case, there's a Black & Decker Service Branch within twenty-four hours of you. You'll receive expert, economical repair work . . . and you'll have your tools ready well before fall schedules are stepped up.



Remember: The nationwide network of B&D Service Branches is company - owned - and - operated, not small repair shops "licensed" by a manufacturer. They offer you factory-trained mechanics and genuine replacement parts. They interpret our Service Policy and Guarantee to your best interest. We operate them for your convenience and lifetime satisfaction with Black & Decker Tools!



And when you're service-checking, why not take a look at the complete Black & Decker Line? See how you can improve your present B&D-powered operations with newer models of tools! See how you can extend the advantages of B&D power to other operations with other types of B&D tools! THE BLACK & DECKER Mfg. Co., 607 Pennsylvania Ave., Towson 4, Md.



OUTPUT JUMPS 110%



"Hi-Drive" — big name in midget motors — manufactured by Blake Manufacturing Divi-sion, Ray-O-Yac Company, one of the world's largest producers of miniature motors, flashlights and dry batteries.

with Millers Falls "Adjustomatic"® Clutch Electric Screw Drivers

Driving tiny, self-tapping screws in a thin plastic housing - it's the kind of job usually considered too delicate for power drivers.

Yet, Millers Falls No. 52's with the patented "Adjustomatic" Clutch are performing this operation speedily, accurately - without splitting the plastic walls - without stripping threads. And - production has more than doubled.

Ruggedly-built, vibrationless, power-packed, these remarkable drivers have a velvet touch. Torque adjustment can be set within inch-ounces - and stays put month after

If you want to speed up your own driving operations, write for full details on the Millers Falls broad line of

> high-production "Adjustomatic" Clutch Drivers - or let us arrange for a convincing demonstration.

> > MILLERS FALLS COMPANY Greenfield, Mass.





The Mark of Superiority

New Long-Wearing Polyester Rubber Has Many Possible Uses

A new polyester rubber, chemically similar to the German Vulcollan but offering important processing advantages over the German product, has opened up a wide new field of possibilities according to Dr. R. P. Dinsmore, vice president in charge of research and development for Goodyear Tire and Rubber Co., Inc., Akron, Ohio.

The product, Chemigum S.L., has been developed as a result of 12 years of research. Unlike the Vulcollan, which must be molded immediately, the Goodyear product provides a "reaction factor" which makes possible delayed processing on conventional rubber machinery. It is this reaction factor where Goodyear's secret of development lies. It stops the solidifying reaction of the two chemicals at a point where the resultant material can be further processed on mills, calendars, extruders and other factory equipment.

The new rubber, with its greatly increased toughness and resistance to abrasion, has already demonstrated its superiority over existing rubbers for tire treads, and gives promise of similar results in shoe soles and heels, flooring and industrial rubber products. Laboratory and road tests using alternate sections of polyester and natural rubber treads have unmistakeably proven this. One such road test was discontinued after 11.000 miles because the polyester tread showed little wear, while the natural rubber section had worn sufficiently to cause extreme bumping of the

New Packaging Film

The development of packaging from early American days to the present is depicted by Continental Can Company in a 15-minute color film entitled, "The Story of Packaging."

From the opening sequence showing the Mayflower landing at Plymouth Rock, the film, in colorful animation, carries the audience through three centuries of industrial progress.

"The Story of Packaging" places the spotlight on mass distribution and shows how various methods of packaging enable the purchase of ever-fresh goods in convenient amounts and make possible a vast variety of goods to meet every material need.

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-R. L. Polk, President, R. L. Polk & Co., publishers

He has your name and address!

"We have the names and addresses of forty million people who own automobiles," says R. L. Polk, "—and that's only one of the ways we might have you listed!

"We release up to 2½ million advertising mailings a day to these lists. But kits, catalogs and displays—always subject to last-minute changes—must reach the dealers first.

"That's when we call on Air Express!

"For one auto manufacturer, we recently made Air Express shipments to 3,000 dealers, not once but three times, just before the new model announcement date. Every one of those shipments *had* to be on time—and every one was!

"Only Air Express could have done it. Yet their rates are not only reasonable — in many weights and distances they are *lower* than other air carriers.

"We have made upwards of 35,000 Air Express shipments over the past four years, ranging in weight from a few pounds to more than a thousand. This top-speed, dependable low-cost service helps us give maximum service to our advertisers. Our use of Air Express will increase another 27% this year."

It pays to express yourself clearly. Say Air Express! Division of Railway Express Agency.



June, 1953

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CHASING

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Off on a Carefree Vacation!

He just contracted with Vinco to produce component parts.

This confidence in Vinco is typical of many manufacturers from coast to coast. They have learned that whether the parts to be produced have close or loose tolerances, these parts will be delivered as specified, at a minimum cost and with a minimum of scrap.

VINCO CORPORATION

9119 Schaefer Hwy. Detroit 28, Mich.



Mass Produced Parts Gears Gear Pumps Spline Gages Aircraft Gears

VINCO

THE TRADEMARK OF DEPENDABILITY

MILLIONTHS OF AN

Goal Association Urges Support Of Oil Import Limitation Bill

The American Coal Sales Association has called on its members to urge their Congressmen to support a bill introduced in the House to revise the Reciprocal Trade Agreements Act, which expires June 12, 1953.

Especially called to the attention of members are the provisions of Section 13, H.R. 4294, which provides quantitative limitations upon imports of petroleum products and residual fuel oil. An overall quota of 10% is established covering imports of "crude petroleum and all products derived therefrom," and a 5% limitation on imports of residual fuel oil. Quotas in any calendar year are based upon domestic demand for the products in the corresponding quarter of the preceding year. The quotas may be modified or suspended by the President under certain specific conditions.

Poster Series On Safety For Fork Truck Operators

A new series of eight safety posters, designed to remind industrial truck operators of safe driving and operating practices, has been produced by The Baker-Raulang Company.

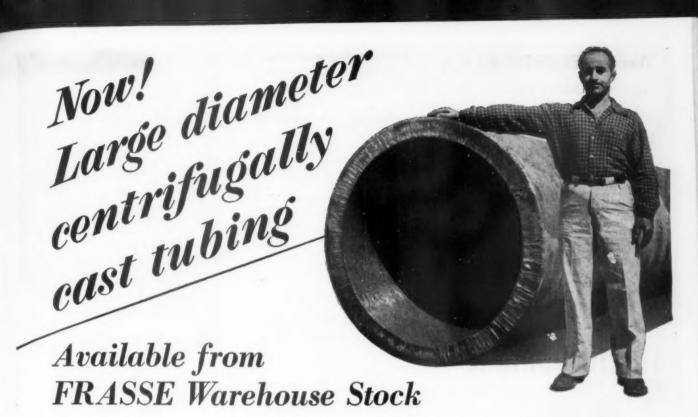
Printed in color on 14" x 22" sheets, the posters are done in a bold cartoon style which makes them easy to read at a distance and while moving. The tag-line, "Be Smart—Be Safe", appears on each poster.

"High-stack with care", "Know your clearances", "Watch load limits", "Always brake carefully" are typical subjects treated in the new series.

The complete set, mailed ready for mounting on company bulletin boards or any wall, will be sent to anyone requesting it on his company letterhead.

Circular Saw Blade Sharpener

A jig for gumming circular saw blades has been developed at the Long Beach Naval Shipyard. Through use of this jig, saw blades up to 40" dia. can be sharpened on a gumming machine that formerly had a capacity for blades only 12" to 30" dia. The new device increases the usefulness of the gumming machine at both ends of the scale, enabling it to handle saw blades of less than 12 in. diam. and more than 30 in. diam.



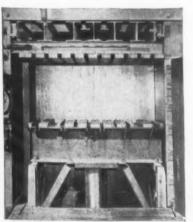
ACIPCO steel tubing, centrifugally cast, is now available from Frasse in sizes ranging from 2" to 50" O. D., wall thicknesses of 1/4" to 4", in lengths up to 16 feet. The more popular sizes are immediately available from stock. Other sizes and analyses (in quantities as little as 16 feet) can be made to order promptly.

Government, ASTM, AMS, ABS, ACI and AISI specifications can be readily met. ACIPCO tubing is made in any standard or non-standard analysis. Steel used

> in its manufacture is produced in electric furnaces.

Typical applications for ACIPCO tubing include: Hydraulic cylinders, ship propulsion shafts, cracking still tubes, retorts, and paper mill rolls. In addition, it has received wide recognition as a component in weldment applications. Why not investigate the many advantages offered by this versatile product?

Frasse Engineering Memorandum #11 covers in detail the characteristics, properties, analyses and pertinent facts about ACIPCO centrifugally cast steel tubing. Mail the coupon below for your free copy today.



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COMPLETE FACTS ABOUT ACIPCO CENTRIFUGALLY CAST TUBING MAIL TODAY!

Fabrication of this hydraulic baling press required a 22'6" ram of AISI 1030, and a 21'6" cylinder of AISI 1025 ACIPCO tubing, circumferentially welded to proper length, was used successfully for both items. The manufacturer, Consolidated Baling Machine Co., relied on Frasse to furnish ACIPCO tubing in the size, length and analysis needed.

Peter A. FRASSE and Co., Inc. 17 Grand St., New York 13, N. Y. Please send me, without obligation, complete facts about ACIPCO Centrifugally Cast Steel Tubing.



Peter A. FRASSE and Co., Inc.

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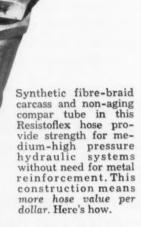
JUNE, 1953

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313

New RESISTOFLEX hose assembly . . .

withstands medium-high pressures without wire reinforcement



- High burst strength— stays high even as hose working age increases.
- High pull strength couplings don't pull out.
 High impact strength hose regains original cross section after crushing
- 4. Long life-immune to fatigue from hydraulic impulse and flexing.
- 5. Full flow fittings and hose have same I.D.
- 6. No gumming or clogging of hydraulic circuit-compar inert to oils.

Write for Data Sheet No. MH-1

RESISTOFLEX

CORPORATION

Threadwell Tap Manual Offered Free Of Charge

The Threadwell Tap Manual. published by the Threadwell Tap & Die Company, Greenfield, Mass., is now being made available free of charge through industrial distributors or by writing to Paul W. Polk, vice president of the company.

The manual, which the company believes to be the most complete compilation of tapping information, contains listings of standards for taps and dies, information on special taps, and other data needed by purchasers of taps and dies.

Flanged Instrument Ball Bearing Features Straight OD

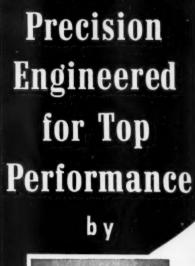


An extra-light, flanged instrument ball bearing features straight rather than tapered OD, refined processing to super-precision (ABEC Class 5 and higher) tolerances, and a two-piece, cone-controlled, cylindrical-pocket, pressed metal cage. The balanced design favors low and uniform running torque as well as quiet operation. Construction is extra light, with all excess metal eliminated to conserve weight and space. It is recommended for gimbals and general precision instrument assemblies. It is available in all-stainless steel (type as well as conventional SAE52100 from the makers, New Hampshire Ball Bearings Inc., Peterborough, N. H.

Commercial Standard Set For Vinyl Plastic Film

The U. S. Dept. of Commerce, Commodity Standards Division announces that, as a result of the acceptance by a majority of manufacturers, distributors and users of general purpose vinyl plastic film,

(Please turn to page 316)





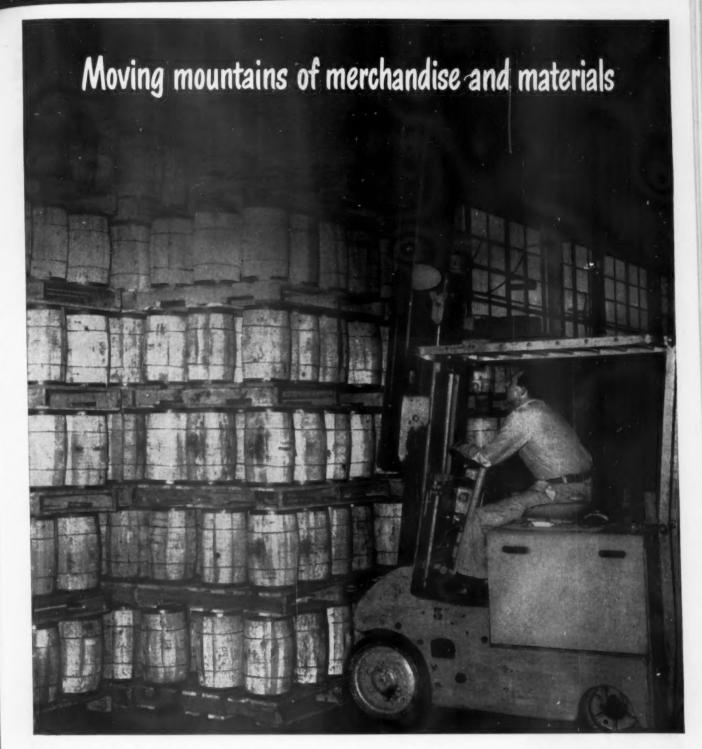
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OVER 4000 TYPES OF CASTERS & WHEELS FOR EVERY USE!

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Just at the touch of a finger, too! Throughout industry, battery-powered material handlers are helping to speed the movement of materials and lower unit handling costs. They work round-the-clock...lifting, hauling and tiering. And many of these electric trucks are powered with dependable, long-life Exide-Ironclad Batteries.

There are dependable Exide batteries for every storage battery need. They are used to power mine locomotives, trammers and shuttle cars. Railroads use them for diesel-locomotive starting, car-



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lighting, air-conditioning, signal and communication systems.

Exide batteries are used by telephone, telegraph and cable companies . . . electric light and power utilities . . . radio and television stations . . . ocean, river and harbor vessels . . . municipal fire alarm and police telegraph systems . . . more than 250 different applications in all. And on millions of cars, trucks, tractors and buses, they daily prove that "When it's an Exide . . . you start."

315

1888 . . . DEPENDABLE BATTERIES FOR 65 YEARS . . . 1953

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 2, Pa. • Exide Batteries of Canada, Limited, Toronto

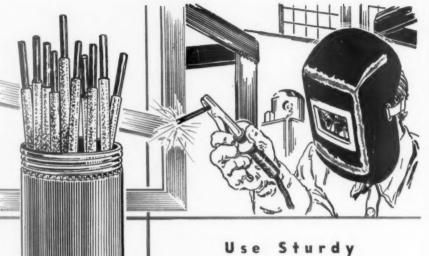
June, 1953

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Our Metal End Telescope Cans and Curled and Disc End Containers are ideal for welding rods . . . cutting tools, such as drills and reamers . . . also gauges and other instruments.

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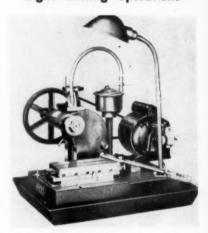
• Spirally Wound Tubes and Cores 10. A. Plymouth, Wisc., Jemesburg, N. J., Ogdensburg, N. Y. • ABRASIVE DIVISION of Claveland SALES OFFICES: Grand Central Terminal Bildg., New York City; Washington Gas Light Bildg., Washington, D. C., Wash Harfford, Conn.; Rachester, N. Y. Cleveland Container Canada, Ltd., Prescett, Ontario • Offices in Toronto and Montreal



(Continued from page 314) of a recommended commercial standard, circulated among the trade under date of January 18th, 1953, the new standard will be considered effective for new production after May 22nd, 1953.

When printed, one copy of the standard, identified as General Purpose Vinyl Plastic Film, Commercial Standard CS192-53, will be mailed free to each acceptor of record. Additional copies may be purchased from the Supt. of Documents, Government Printing Office, Washington 25, D. C. Until printed copies are available, the mimeographed copy, TS-5165, of the recommended standard mailed on January 28th, 1953, may be used.

Bench-Type Mill Handles Light Milling Operations



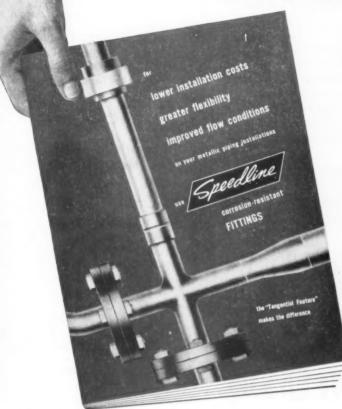
To handle a wide range of light milling operations, Viking Industries of Rockford, Ill., is offering a new bench-type mill. It is especially designed to do precision work and cut production costs on jobs often assigned to larger mills. Adaptable to hundreds of varied jobs, the mill can be used for making key ways, slotting, splitting, squaring at different angles, milling flat spots on small shafts, spline cutting, small screw slotting, etc. Interchangeable pulleys make possible a wide range of speeds up to 7,000 rpm. The complete unit is light and easily portable. Base dimensions are only 11" x 18".

Angle Dresser Has Graduated Base, 5-Minute Vernier

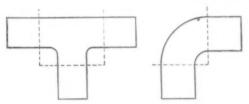
Are you looking for an inexpensive wheel dresser for dressing angles on grinding wheels? The new dresser, with a graduated base and (Please turn to page 318)

HOW TO SAVE MONEY ON STAINLESS PIPING

Speedline system cuts cost, increases flow and capacity



NEW 24-PAGE CATALOG describes and illustrates the many cost-saving advantages of Speedline Fittings with the "tangential feature". Size ranges and dimensions of all Speedline Fittings are also given along with helpful application information. Request your free copy on your company letterhead.



Look for the "Tangential Feature"

These drawings show a Speedline Tee and 90° Elbow. The dotted lines show the termination points of conventional fittings. The additional straight section of Speedline Fittings permits attaching of unions or flanges without fouling, reduces the number of welds required, and eliminates troublesome curved or angle joints. The tangential feature is common to all Speedline Fittings such as Ells, Tees, Crosses, etc.

• It will pay you to look into this new idea in corrosion-resistant piping. By using light wall stainless pipe and versatile *Speedline* Fittings, piping costs have been reduced 10% to 50%... and at the same time, flow and capacity of the line has been increased!

Here's the way it works:

If you are now using Stainless Pipe . . .

... chances are that it is the conventional Schedule 40. But this heavy wall is not needed in 90% of the cases. Light wall Schedule 5 pipe costs about half as much, and all sizes will easily withstand 150 p.s.i. working pressures. Speedline Fittings are specially designed for fast, low-cost installation of light wall stainless pipe lines. And because light wall pipe of the same size has a larger inside diameter than heavy pipe, you gain 15% to 25% greater flow and capacity!

If you are now using Stainless Tubing...

... the Speedline system offers real savings and advantages. It permits you to change to a light wall pipe rather than tubing size—at no increase in cost. And here's where you gain. Standard equipment like valves, pumps, sight gauges, etc., are made in pipe sizes—you hook right in without special adapters! And equally important, piping permits you to use the next lower dimension (for example, 1" Sch. 5 pipe has even greater capacity than 1¼" O.D. tube). This means that you can use smaller valves, flanges, and other accessories—an entire installation would be considerably lower in cost.

Speedline distributors are located in principal cities from coast to coast



Corrosion-Resistant FITTINGS

-the newest thing in pipeline economy

Manufactured by HORACE T. POTTS CO. • 530 E. Erie Avenue • Philadelphia 34, Penna.

JUNE, 1953

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MECHANICAL TUBING

Call Murray's nearest warehouse for seamless cold-drawn mechanical tubing in carbon steel; also for seamless or welded stainless tubing in many analyses; size range . . . 1/8- to 14- inch O. D.

For aid in finding the tubing best suited to your particular need, consult a Murray representative. He may help you uncover new economies in the purchase of mechanical

WRITE FOR CURRENT STOCK BULLETIN

FROM STOCK

Other Murray products include carbon steel tubing and pipe for mechanical and pressure purposes; Welding and screw type pipe and tube fittings. Tube bending, up-



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... EXCELLENT FACILITIES for PICKLING & OILING

Our Record: Over 50 years of progressive galvanizing service to manufacturers and fabricators of iron and steel products . . . any size or shape, any size order from the smallest to the largest. Excellent facilities for pickling and oiling.

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VISIT THE THOLLENDEN ... COMPLETELY REDECORATED!

- * 1000 ROOMS WITH BATH
- * RADIO IN EVERY ROOM
- SIX FINE RESTAURANTS
- * CENTRAL DOWNTOWN LOCATION
- * GARAGE ATTACHED

HOTEL

Robert P. Joyce, General Manager



(Continued from page 316)

5 minute vernier to permit precision set up and dressing, put out by Royal Oak Tool & Machine Co., 29800 Stephenson Highway, Royal Oak, Mich., may fill the bill. The diamond tool is mounted in a hardened steel block. Dressing is accomplished by sliding the block across the hardened surface of the dresser plate, which can be set to any desired angle. The inverted "T" slide permits dressing of the wheel on either side. While designed for a D.S. bench model radial cutter, it can be used on most other OD grinders.

25 Experts To Address First Basic Materials Conference

1 1 1

A group of 25 outstanding experts will address the first Basic Materials Conference which will be held in New York concurrently with the first Exposition of Basic Materials for Industry at Grand Central Palace, June 15-19, it has been announced by Clapp & Poliak, Inc., New York, founders of the event

Discussions will cover the materials used for all types of products, from toy trains to steam turbines and jet engines, and will consider such aspects as the effect of atomic products on materials of the future. Subjects include alloys, light metals, titanium, plastics, ceramics, nonmetallics; insulating, magnetic and lubricating materials.

T. C. DuMond, editor, Materials & Methods, will be general charman of the conference. Competition among materials for a place in the finished product has risen sharply in the past decade, it was pointed out, and there is no manufacturing industry which has not been affected. A manufacturer now must choose among 25,000 basic materials before deciding which shall be used for his own product.

Both exhibits and conference sessions will highlight the growing research problems of manufacturers. Hundreds of engineers from companies which produce raw materials will be present to answer questions and to supplement the experts at the conference.

An entire session will be devoted to the effect of the introduction of new materials on sales, design and production, while another will consider how to select and specify materials as well as the reduction of costs through standardization.

The plant that service built

It was with mingled emotions of pride and gratitude that we moved to our new plant in Garden City, New York. Our pride was the pride of fulfilling an ideal of which the plant itself is a symbol. And our gratitude was for you, our customers, who have made everything possible.

As we glance over the 50,000 sq. ft. of new warehouse space, one thought is uppermost in our minds. It is the thought that now as never before, the ideal of service to which our past has been pledged and our future dedicated, can be fully realized.

Yes, this is the plant that service built, service we hope to have the privilege of proving to you.

Tube Distributors Co., Inc.



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Warehouse Distributors: Alloy Stainless and Carbon Steel Tubing • Alloy Bars • Aircraft and Commercial Quality—Boiler Tubes

JUNE, 1953

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ROLQCK

FABRICATED

WHY FABRICATED?

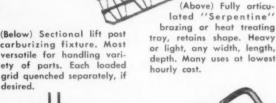
All Rolock heat treating equipment is fabricated... not cast. Every carrier is job-engineered for the specific use and made from the correct metals and alloys for maximum resistance to all conditions of exposure, shock and abrasion. Especially successful are Rolock applications of nickel alloys . . . replacing heavy castings with durable, lighter weight fabrications. The examples shown below, while custombuilt, can be adapted to your needs. We welcome your requests to solve your heat treating equipment problems.



(Above) Stainless drop-bottom pit furnace basket for quality, uniform heat treat. Saves seconds between heat and quench.



(Above) Rugged assembly for carburizing shafts in pusher furnace. Adjustable posts position fabricated alloy screens; mesh to suit work. Light weight,





high pay load, long life.

(Above) Alloy carburizing basket. Loose joints expand under heat. Rugged, flexible construction resists abuse.



(Right) Inconel basket assembly for nitriding. Only required baskets need be used for less than capacity operation . . . reducing furnace load.



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ROLOCK INC. . 1272 KINGS HIGHWAY, FAIRFIELD, CONN.

OBERNGINEERED for better work
Easier Operation, Lower Cost

Aluminum Gravity Wheel Portable Conveyor Designed For Strength

An aluminum gravity wheel portable conveyor is made by Speedways Conveyors, Inc., 1202 Niagara St., Buffalo 13, N. Y. Designed for strength and easy handling, the conveyor is 33 1/3% lighter than steel models and every part, except wheels and axles, is made of a resilient aluminum alloy that is stronger than steel. It has 21/2 x 1 channel and rigid bolt construction. Its capacity is equal to that of the company's other models and it is available in the same standard widths. In addition to the new aluminum gravity conveyor, the company has begun production of aluminum belt conveyors in special models.

Radio-Active Tracer Aids Communications System

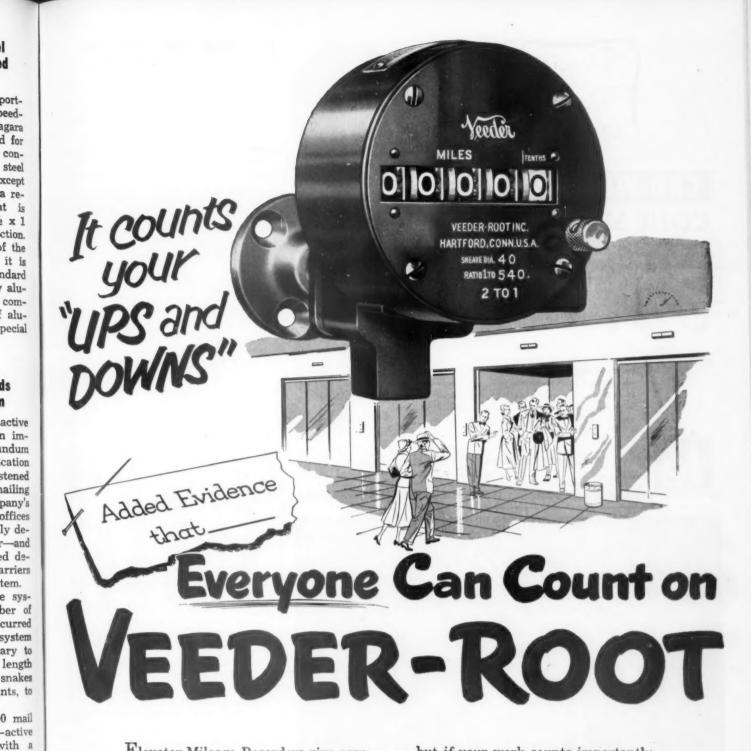
A 60-cent drop of radio-active cobalt is currently playing an important role in The Carborundum Company's internal communication system. The cobalt, which is fastened permanently to the metal mailing carriers that service the company's 40-acre plant and executive offices in Niagara Falls, N. Y., is easily detected by a Geiger counter—and thus has practically eliminated delay in locating jammed mail carriers in the pneumatic mailing system.

Failures of pneumatic tube systems are caused in a number of ways, and every time one occurred—before the new detection system was initiated—it was necessary to send men along the entire length of the tunnel, poking metal snakes into the tubes at section joints, to find the location of the jam.

Now, with each of the 200 mail carriers tagged with the raido-active cobalt, one man, armed with a Geiger counter can walk along the tube lengths and find the source of a stoppage in a matter of minutes.

The tracer element is applied in the following manner: absorbent paper discs, 1" in diameter, are placed into a solution of the soluble cobalt and water and then placed between two pieces of plastic. With the use of heat and pressure, the raido-active discs are hermetically sealed in the mailing carriers.

Health hazard is no problem, since the amount of cobalt used makes the mail carriers no more dangerous than the average luminous dial of a wristwatch.



Elevator Mileage Recorders give accurate figures on vertical miles . . . so that it can be plainly seen...in advance...when it's time to replace cables, overhaul cars, motors, and what have you . . . including your life.

Yes, the V-R wheelmark monogram protects millions of people daily, from the depths of the sea to the stratosphere. Of course, not all V-R Products and services are available nowadays

... but if your work counts importantly in defense, then you can count on Veeder-Root to help you, as soon as rush commitments permit.

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"The Name That Counts"

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Counts Everything on Earth

JUNE, 1953

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CAN WE SERVE YOU

CONE SHAPES AT A SAVING



*SIZES: 1" to 30" lengths.

*TAPERS: 45" to 44°.

*TOPS: Straight, round, open, closed.

*FINISHES: Smooth, rough, ground, flocked.

Cones may be impregnated for strength, toughness and waterproofed. They can also be perforated, flocked, printed, lacquer tipped, scored, notched, covered with novelty wraps. Also supplied in various colored stock. We make cone shaped containers. Our complete laboratory and engineering service will consider any problem. If it can be made out of paper, and will save money, we can make it for you.



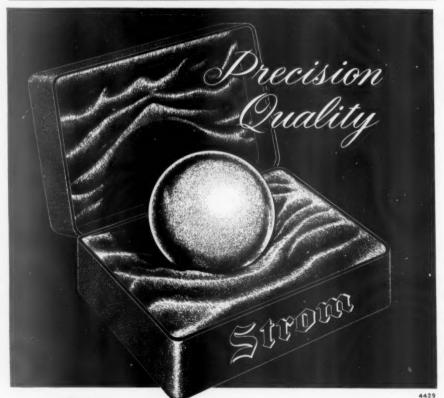


SONOCO PRODUCTS COMPANY

MAIN OFFICE-HARTSVILLE, S. C.
HYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT.

DEPENDABLE SOURCE OF SUPPLY

LOWELL, MASS.



STOWN STEEL BALL CO.

Largest Independent and Exclusive Metal Ball Manufacturer
1850 SO. 54th AVE., CICERO 50, ILLINOIS

Avoid Losing Law Suits

(Continued from page 124)

upon a contract to which it was applicable under conflict of laws principles to sell perishable agricultural commodities in interstate commerce. The necessary result in such a case would be that rejection by the buyer of commodities purchased under the void contract would not be a case of unfair conduct under the federal act or give a right on the part of the seller for reparation therefore under the act."

This court also explained that under all circumstances the validity of contracts to sell perishable agricultural commodities in interstate commerce is determined by the federal laws and the regulations. On the other hand, if no federal law is applicable, the state's laws are valid and effective. The court said:

"Therefore, since the federal act has not brought this particular subject under federal regulation, the statutes of frauds of the various states remain applicable to such contracts. This appears to be the view taken by the Secretary of Agriculture and we think it is inescapable in the light of the silence of the federal act and regulations upon the subject."

Management Consultant Looks At Purchasing

(Continued from page 73)

Still another way in which the purchase orders can be revealing is by a review of the number of "rush" orders that are issued. If it happens that some departments are constantly running out of supplies and having to reorder on short notice, it can safely be assumed that the inventory control system, if there is one, is not working at all satisfactorily.

Sometimes it seems that printing is one thing that has always to be ordered in a rush. Yet a followup on a few of these rush printing jobs can be very justified. Often delivery is specified for a certain date but, strangely enough, is accepted some time well after the deadline. Frequent cases of this sort suggest that the department or departments concerned are not planning their work as well as they might or are habitually specifying unrealistic dates of need without considering the extra burden thus

(Please turn to page 324)

SILASTIC* helps Westinghouse score another FIRST ... "COOKING without LOOKING"



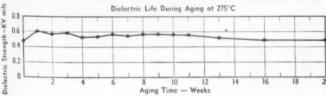


Performance proves...

Works

where other materials fail!

Many of the most able designers, like those Westinghouse men who made automatic cooking a practical reality, save time and money by trying Silastic first when they need rubbery properties at temperatures far above or below the limits of any ordinary rubber. And exceptional stability at both high and low temperatures is combined in Silastic with excellent resistance to outdoor weathering and good resistance to a variety of hot oils and chemicals. Further proof of the inherent stability of Silastic is given in this small graph



T. M. REG. U. S. PAT. OFF.

ATLANTA CHICAGO CLEVELAND BALLAS LOS ANGELES **NEW YORK** WASHINGTON, B. C. (Silver Spring, Md.)



: Pibergias Canada Ltd., Toronto . England: Midland Silicanes Eld., London

showing the effect of aging at 275°C (527°F) on the dielectric strength of Silastic.

Engineers have been working for years

range surface units that would forever

Westinghouse, using a bit of Silastic, a

This heat control system regulates the

be warmed, boiled or fried without

device, the thermistor, is embedded

in Silastic paste for protection and heat transfer. Flexible Silastic insulated

cable is used to connect the thermistor

Electronic Eye itself is isolated in the

The Silastic components have stood up

grease, coffee and syrup, as well as

accelerated life testing equivalent to 15 years of actual service.

under exposure to boiling water, oil,

center of a flexible Silastic diaphragm.

to the exterior wiring, and the

if all the water is boiled away.

danger of burning or scorching-even

The heart of the temperature measuring

temperature so accurately that food can

thermistor, and a few relays and vacuum tubes, to perfect the "Electronic Eye."

banish pot watching. But it took

to make a heat control system for electric

Dielectric strength measured with ¼ inch electrodes in air on two layers of Silastic R Tape, for example, average 0.475 KV per mil. After 20 weeks of continuous aging at 275°C with both surfaces exposed in an air circulating oven, dielectric strength gradually decreased from a high of 0.601 to 0.485 KV per mil.

That's the kind of performance that makes Silastic, the Dow Corning silicone rubber, unique among all rubbery materials. When you need rubbery properties at temperatures above 150°F or below -40°F , or excellent dielectric properties in a resilient and flexible material specify Silastic.

MAIL COUPON TODAY FOR DATA ON THE PROPERTIES, PERFORMANCE AND APPLICATIONS OF SILASTIC.

DOW CORNING CORPORATION, Dept. BC-6, Midland, Michigan

Please send me:

Address _

- ☐ Silastic Facts 10a, proporties and applications of Silastic stocks and pastes.
- List of Silestic Fabricators.

 "What's A Silicone?", year new 32-page booklet on silicone products and applications.

Company ___

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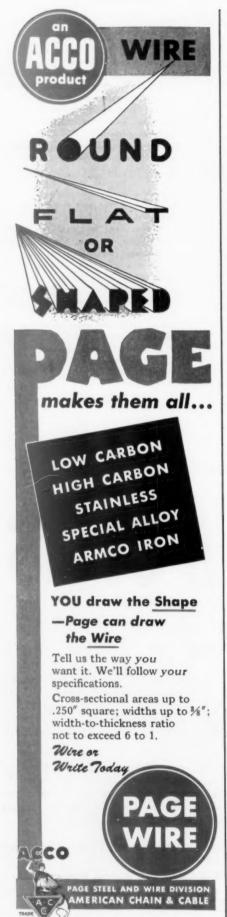
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nessen, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Portland, San Francisco, Bridgeport, Conn.

Management Consultant Looks At Purchasing

(Continued from page 322)

placed upon the purchasing department and the printer, and without regard for the extra costs that rush orders usually entail.

A review of the nature and frequency of requisitions can also yield a lot of information. For example, if the same commodities are being bought in small lots at frequent intervals, instead of less frequently in larger quantities, the inference would seem to be that the storage capacity and facilities might well be reviewed with an eye to some improvements. (Remember, we are assuming that the purchasing agent is doing a good job, so that the piece-meal buying is presumably beyond his control.)

There are many other ways in which the purchasing department can provide a key to conditions in the rest of the organization. Enough instances have been cited, however, to show that there is more than meets the eye in the operation of a buying office.

Top management can learn a lot from the experiences of the purchasing agent—provided that he has already been given his full status in the organization—and provided he is already doing a good job in running his own show.

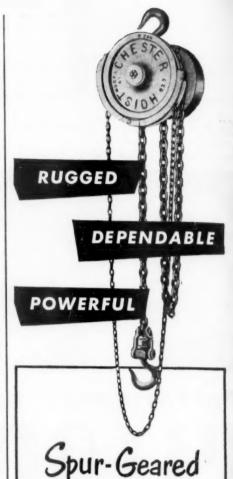
Centralized Policies and Aid For Divisional Buying

(Continued from page 88)

is conducted at the divisional level in keeping with the policy of decentralized operations, involves the use of all forms of transportation, all of which are subject to either or both federal or state statutes. Problems or questions on transportation charges or policy are administered by the Association through an executive committee. The statutory regulations, and suggested practices and policies thereunder, are reflected in a Standard Practice Manual for the guidance of divisional traffic departments, prepared and kept up to date under the direction of the executive committee

The executive committee also cooperates with General Motors Institute in developing a course of study in traffic management, which is included in the Institute's curriculum.

(Please turn to page 326)



CHESTER HOISTS

Chester Spur-Geared Chain
Hoists are made for hard work.

ruggedly built to do your tough

lifting jobs efficiently.

They're safe for your men and equipment, too, because they're actually built to a safety factor of 5 times their rated load.

They operate more smoothly and wear longer, because they're Timken Tapered Bearing equipped.

Capacities, ¹4 to 25 ton in standard Spur-Geared...quickly available, also, the Chester specials including Low Headroom, Extended Handwheel, and others. Ask your distributor... or write for complete catalog and tell us your requirements.

CHESTER HOIST DIVISION

The National Screw & Mfg. Company Lisbon, Ohio



-yet the Stainless valve is twice as old!



ANOTHER GROUP of Stainless Steel valves used in the operation of this Gulf Coast Refinery.

Here's photographic evidence of the way Stainless Steel's superior corrosion resistance keeps it in service under severe conditions far longer than other materials.

Both of these end gate valves were in service in one of the pipe stills at a Gulf Coast Refinery. The valve at the left, trimmed with Stainless Steel, is still in excellent condition after two years of service in light Crude Naphtha containing sulfur compounds. But the other valve,

made of less durable materials, failed after a year of the same kind of service.

Stainless Steel's ability to stand up under severe service pays off in fewer costly shutdowns, less maintenance and longer equipment life. In many applications, it is far and away the most economical material you can use.

For finest performance, make sure the Stainless you use is perfected, service-tested U·S·S Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH - AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO - NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA, - UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S STAINLESS STEEL



SHEETS · STRIP · PLATES · BARS · BILLETS
PIPE · TUBES · WIRE · SPECIAL SECTIONS

3-875

UNITED STATES STEEL

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MALLEABLE IRON CASTINGS

that you can depend upon!

The right connection—for the malleable iron parts you need—can be a source of satisfaction to you.

Many, many leading makers of durable goods use Moline Iron Works Malleable Iron Castings to uphold the quality of their products.

Good service, quality control and reasonable prices are three reasons why your connection with Moline Iron Works can be both a pleasant and profitable one. We invite your specifications for quotation.

WE SHIP QUICK! Phone 4-5676 for Service

The parts shown here are representative of our production for automotive, farm implement, appliance and rallroad customers.



Moline, Illinois, U. S. A.







Centralized Policies and Aid For Divisional Buying

(Continued from page 324)

The Association holds an annual meeting, under the direction of the executive in charge of Procurement and Schedules, and the executive committee meets at least quarterly. Other committees meet as the dictates of business may require.

In addition to its Association activities, the office of the Secretary keeps management advised of substantial changes in transportation costs.

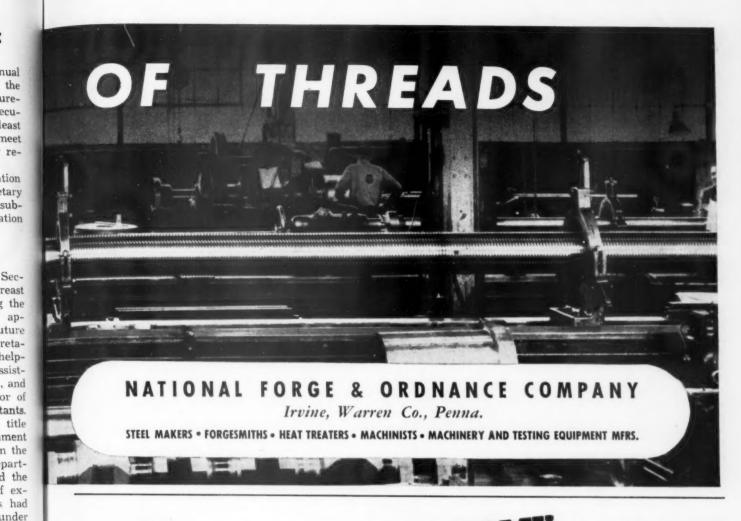
Other Purchasing Aids

The Material Procurement Section, in Washington, keeps abreast of developments there, keeping the corporation and the divisions apprised of them and of likely future developments, getting interpretations of governmental rulings, helping the divisions whenever assistance is required at Washington, and so on. W. H. Swartz is director of this section; he has two assistants.

W. M. Walker, Jr., has the title of Administrator of Government Regulations, having his office in the Procurement and Schedules Department at Detroit. This title and the duties that go with it are self explanatory to anyone who has had experience in doing business under a system of governmental controls and regulations.

He has other duties as well, one of which is receiving inquiries from thousands of would-be suppliers, and assisting with their inquiries to the several GM divisions. A potent aid in handling this part of his responsibility has been the preparation and distribution of a booklet entitled "Selling to GM". This booklet is a directory of General Motors purchasing departments and a listing of principal GM products. More than 90,000 copies of it have been distributed since it was first published, little more than a year ago. It has been effectively instrumental in putting potential vendors in touch with the buying groups, where their facilities and products could best be utilized, and has thus contributeed to the broadening of supply sources from the normal 12,-000 to the present 20,000.

> CLASSIFIED SECTION SEE PAGE 334





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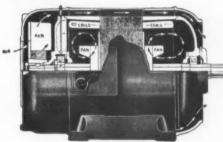
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June, 1953

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331

ELECTROSTATIC SPRAYING

We have read the article on "Some New Finishing Methods" in the April issue of PURCHASING. We are interested in new spraying processes and would like the names of some more firms engaged in the manufacture of electrostatic devices.

F. A. Huep Waldorf Instrument Corp. Huntington Station, N. Y.

 Our own source lists show Ashdee Products, Inc., Dixie Highway, Homewood, Illinois, as the only manufacturer of record in the electrostatic spraying field. It is our understanding that this company owns the basic patents on the process, and that other manufacturers are licensed to produce certain equipment and accessories under these patents. Further information as to other sources is being sought.

HOURS FOR INTERVIEWS

One of our subscribers has raised a question as to when purchasing agents start interviewing. He has the problem, as many of our subscribers have, in trying to get his salesmen started working earlier in the day and calling later in the afternoon. Have you made surveys on this subject, or do you know of any surveys that have been made, in which purchasing agents have stated when they start interviewing salesmen?

Blaine S. Britton, Sales Service

The Dartnell Corporation Chicago, Illinois

• In the absence of any comprehensive survey, we have checked the reception room booklets of 53 representative purchasing depart-ments, which are in our current file. Pertinent information regarding business hours is customarily included in such booklets.

29 of these make no mention of office hours or interviewing hours. It is probably a fair assumption that in these cases being open for business implies being open to receive business callers.

In 9 cases, the office hours are stated, but there is no reference to interviewing hours. In these cases there is a definite implication that callers will be received throughout the business day.

In 6 cases, office hours are stated, with the suggestion (but no absolute restriction) that interviews be scheduled in the middle hours of the day. In two of these instances, the suggestion appears only as a statement: "We like to keep the last hour of the day free, since most of us are occupied with office detail at that time." In the other four cases, specific hours are suggested (e.g., 9:30 a.m. to 3:30 p.m.). In 2 other cases, specific inter-

viewing hours are stated, but with the qualification "or by appointment at other times".

In 6 cases, interviewing hours are specified without qualification, allowing from 1 to 11/2 hours of free time at the beginning of the day, and from zero to 2 hours at the end of the day.

In one case, days as well as hours are specified: Mondays and Fridays, interviews by appointment only; Tuesdays, Wednesdays, and Thursdays, calling hours from 10:30 a.m.

to 3:00 p.m.

No significant conclusions or generalizations can be drawn from such a limited sample of purchasing practice. It should be recognized, however, that while interviewing may be the major or even the sole duty of the salesman's day, and the desire to extend that day is a laudable one, interviewing is only one of the many duties which the purchasing agent must perform during his business day, and the desire to have some time free from the interruptions of interviewing, especially at the close of the day when the desk must be cleared, would seem to be reasonable — and probably essential. The salesman who starts "working earlier in the day and calling later in the afternoon" may make more calls in the course of the day, but he may not cultivate cordial good will nor receive the same uninterrupted attention from a buyer who has other duties demanding his attention, as he would during the hours normally devoted to interviewing, unless he had made such arrangements by appointment. There is a suspicion that the salesman working shorter hours may be not only more considerate, but more realistic and more effective, than the eager beaver who follows the schedule of "first in and last out" in his solicitations.—Ed.

QUOTE-UNQUOTE

Apparently our staff director of research, A. H. Gager, thought highly of the article "The Problem of Questionnaires" in your recent March issue. Included in his "Research Revelations" column in the May issue of our Office Executive magazine are quotes of nine paragraphs of your article. Since we handle much of our work through the questionnaire method, Mr. Gager obviously wants to point out to our memously wants to point out to our members the important part questionnaires play in fact finding operations. Richard R. Connaroe, Editor National Office Management Assn.

Philadelphia, Pa.

REPRINTS AT WORK

Thank you for the reprints of the ticle "Mind Your Phone Manners!" from the March issue. The reprint served as inspiration for an editorial message in the April issue of our monthly employee publication, GAI Post. Requests already received from our employees for

J. L. Gabrielle, Mgr. Pub. Relations Gilbert Associates, Inc. Reading, Pa.

WELCOME NEWS

You did an excellent job in covering our policy manual and welcome book-let in your April issue. You may be interested to know that we have re-ceived quite a few requests from purchasing executives all over the country for copies of the manual and booklet, indicating that you have active reader interest. Needless to say, we have been

happy to comply.

E. H. Weaver, Mgr. of Purchases
Union Oil Company of California Los Angeles, Cal.

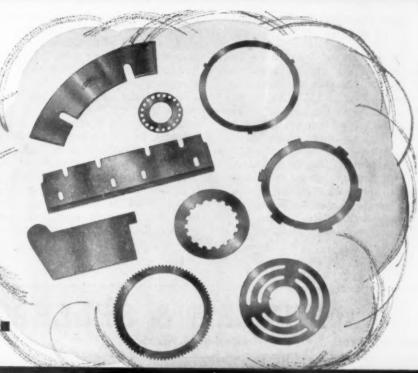
HELPFUL ARTICLE

It will be highly appreciated if you will furnish us by return mail, five copies of the article "Purchasing Department Authority" by Bruce D. Henderson, which appeared in the August issue. I have read this article thoroughly and find it enlightening and educational.

J. M. Dosal Asst. Div. Supply Mgr. Pan American World Airways System Miami, Fla.

Tear sheets sent.—Ed.

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HASING

New Chemical Doubles Life Of Heating Oil Tanks

A new chemical formulation that can double the life expectancy of heating oil tanks has been announced today by F. S. Clulow, vice president, Shell Oil Company. The chemical, called Sonitor, works by retarding corrosion which causes tank leakage and failure.

Research preceding the announcement of Sonitor showed that corrosion is not related to the fuel oil itself but is caused by water that normally accumulates in the tank. "Any home owner who has un-

capped his oil tank has probably noticed the sweating inside the fill pipe," Clulow said. "Moisture condenses inside every tank from the humid air which is breathed in through the vent."

Since water is heavier than the oil, it goes to the bottom of the tank, where it collects in small droplets. In the corrosion process a tiny electric current is set up through the water, eating away the steel atom by atom and converting it to rust. This can occur with only a few drops of water present. In fact, under certain conditions the smaller the area of steel exposed

to attack, the faster the corrosion proceeds and the sooner the steel is eaten through.

Sonitor settles to the bottom of the tank and mixes with the moisture. Its action is twofold: it stops the electric current that attacks the metal, and it reacts with the metal to form a protective coating on the metal surface. Since Sonitor is not soluble in oil, it cannot be dissolved by the fuel and be carried away through the outlet pipe.

The new corrosion inhibitor will not undo damage already done in a tank, Clulow said, but it will prolong the life of any tank.

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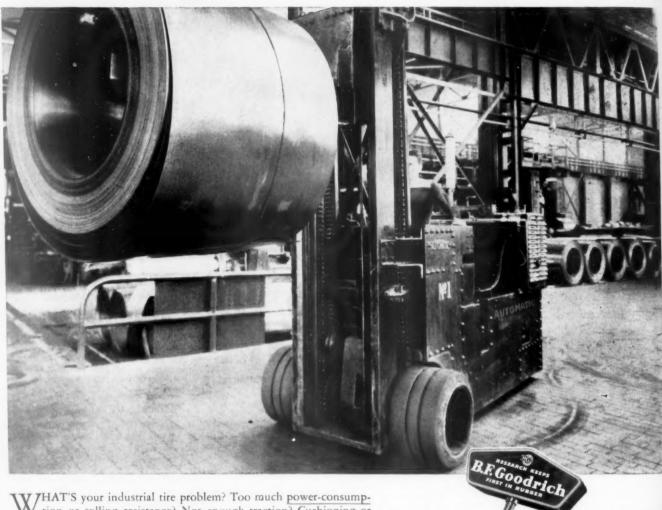
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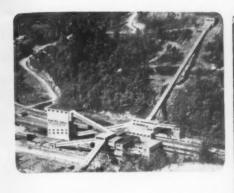
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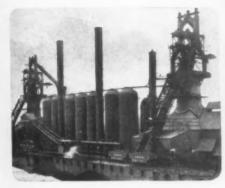
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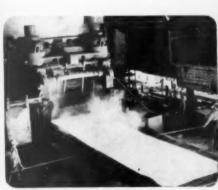


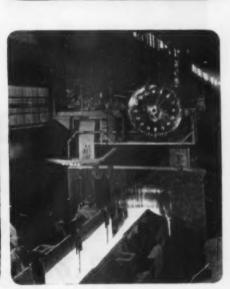
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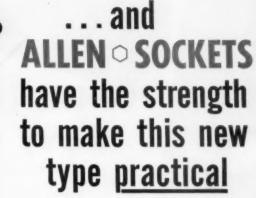
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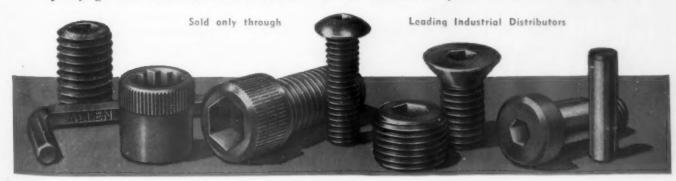


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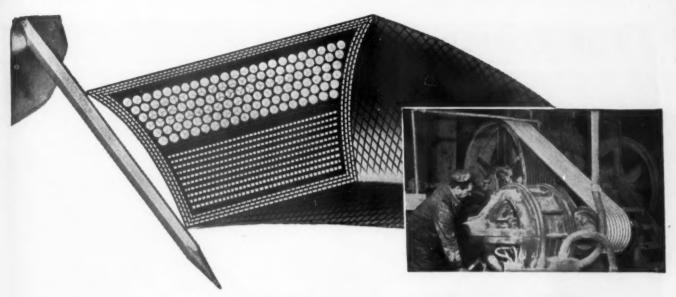
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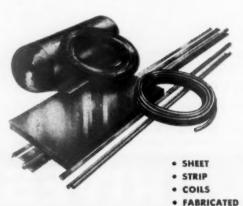
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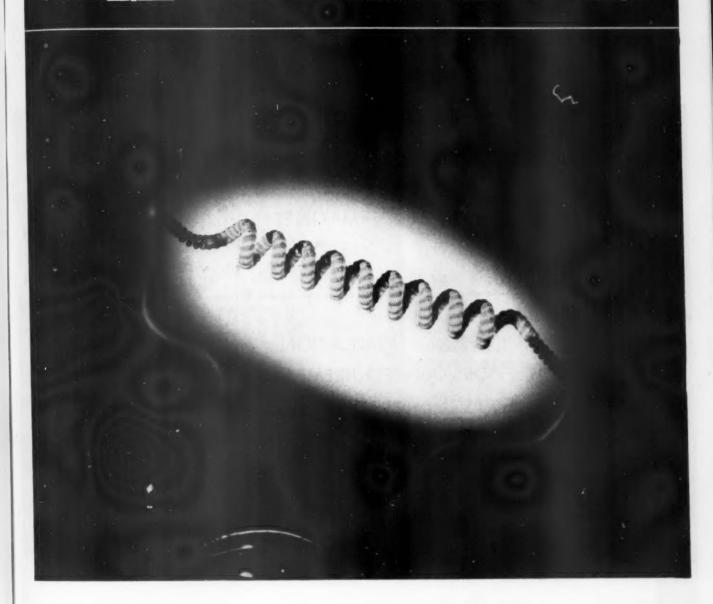
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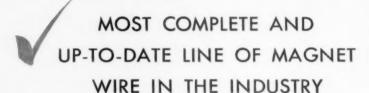
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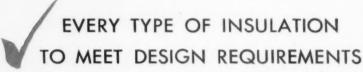
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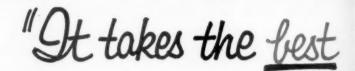




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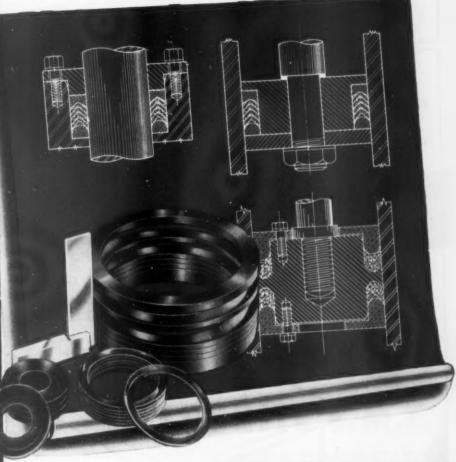
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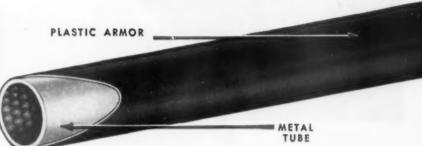
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for your toughest jobs . . . the raceway with 9 lives . . .



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Wherever corrosion, moisture, and chemicals make short work of ordinary raceways, install Republic ELECTRUNITE "Dekoron-Coated" E.M.T. You'll increase the life of wiring systems as much as 10 times. In chemical plants, water and sewage disposal plants, food-processing plants, ELECTRUNITE "Dekoron-Coated" E.M.T. is running up savings in dollars and time wherever regular raceway material must be replaced due to the corrosive action of chemicals and fumes.

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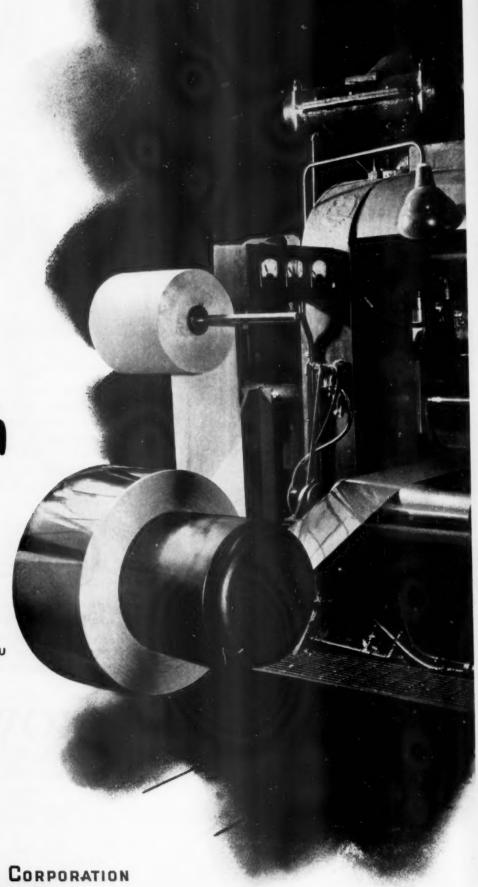
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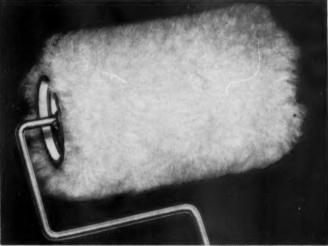
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Cut wire fence re-coating costs!

Users Report Savings of 30% to 40% With Rust-Oleum Extra-Long Nap Lamb's Wool Roller!



Special roller glides easily over wire sections. (Rusted sections have already been primed with Rust-Oleum 769 Damp-Proof Red Primer to Stop Rust.) Finish coat is Rust-Oleum 470 R.M. Aluminum.



A new, exclusive, different-type roller! Greater diameter, specially selected skins, extra-long Lamb's Wool – all combine to give you more coverage faster and easier in the new Rust-Oleum Roller-Coating System.



Close-up shows how Extra-Long Nap Wool reaches around to coat approximately 70% of other side of fence at same time. Rust-Oleum's exclusive penetrating qualities saturate cross wire sections for desired mil thickness.



Man follows with "dry" roller on opposite side of fence to catch and use surplus "tears" and quickly coat remaining 30% of wire sections.



Even barbed wire sections can be roller-coated in one easy pass. 99% of the material is used on the fence – not on the workers, not on the ground.



On long distances of fencing, a 5 man production "team" can achieve even greater savings. The first man wirebrushes the surface to remove dirt, dust, rust scale, etc. The second man applies Rust-Oleum liberally by roller, coating the wire sections and barbed wire. The third man follows on the opposite side of the fence with a "dry" roller to catch and use the surplus. The fourth and fifth men work on opposite sides of the fence, brushing the pipe framework and the barbed wire arms. See how this new Rust-Oleum system can save you money. Attach coupon to your letterhead, mail today.

RUST-OLEUM STOPS RUST!

ATTACH TO YOUR LETTERHEAD - MAIL TODAY!

RUST-OLEUM CORPORATION 2431 Oakton Street, Evanston, Illinois

Please show us how your new Extra-Long Nap Lamb's Wool Roller will cut our wire fence re-coating costs. Include prices, complete literature about Rust-Oleum and nearest source of supply. We have approximately———yards of wire fencing.



You can obtain custom-cut felt parts from American, ready for assembly without further processing. Gaskets, washers, seals, wicks, discs-any shape you need, simple or complicated, can be turned out by us on high-speed machines, with tolerances to meet your specifications.

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These are manned and managed by men who will see that your production is never slowed up by lack of cut felt parts. QUALITY - American produces felt to exact specifications, uniform in density, blend, thickness, strength. This is an engineering material which can be controlled as closely as any other. If you wish, we will cooperate with you in designing felt parts and specifying the right felt to meet your exact requirements, whether for commercial or government applications.

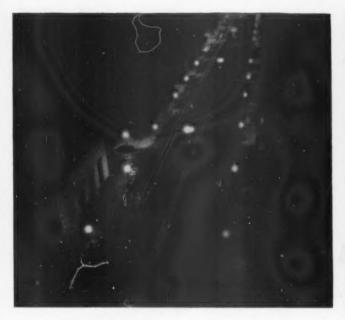
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Westinghouse Mercury Lamps
Are 8 to 10 Times Brighter
Than Incandescents—
Use No More Power





BEFORE changing to Westinghouse Mercury lamps, Richmond, Virginia's Broad Street was lighted with regular incandescents. Lamp poles were 14 feet high and placed 110 feet apart. This resulted in areas of semidarkness between fixtures, and glare, so common to many streets.

Streets, highways, factories, terminal buildings, parking lots, or railroad yards can all be lit more efficiently and for less money with Westinghouse Mercury and Fluorescent-Mercury lamps. They produce more light per watt than incandescents, and have a rated average life of 5000 to 6000 hours—directly reducing your lighting costs. And longer-lasting Mercury lamps cut your maintenance costs

AFTER changing to Westinghouse Mercury lamps, Broad Street is 8 to 10 times brighter, and uses no more power. Lamp poles are 32 feet high and placed 85 feet apart—there is now less glare, and no areas of semi-darkness anywhere on the street.

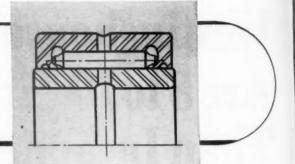
WHERE YOU WANT WHITE LIGHT, you can use the new Westinghouse Fluorescent-Mercury lamps. They produce white light with regular Mercury lamp economy and eliminate the need for color-correcting incandescents. The newest size Westinghouse 1000-watt Fluorescent-Mercury lamp is the cheapest source of mass white light in the world.

The multiple advantages of Westinghouse Mercury lamps are described in a 24-page booklet. To get your copy without cost or obligation, please write to: Westinghouse Lamp Division, Dept. PNG-6 Bloomfield, N. J.

YOU CAN BE SURE ... IF IT'S Westinghouse

to the bone.

A bearing design of simplified construction reduces internal wear

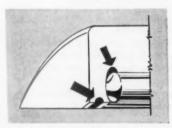


The performance efficiency and life expectancy of anti-friction bearings depends to a great extent on the ability of the bearing designers to hold internal wear to a minimum. They have found that wear can be materially lessened by reducing the number of bearing parts subjected to wear. In the case of MULTIROL SE Series roller bearings all parts have been eliminated except the anti-friction essentials of load carrying rollers and contacting races. Loose or welded in retaining rings and cages ordinarily found in roller bearings of this type have been discarded in the exclusive MULTIROL design.



Here rollers are retained by rolled over lips on end shoulders that are solid extended sections of the outer race. Cages are not required and other delicate parts that may wear, warp or break loose in mounting or in service are not needed. Numerous other advantages accrue from this MULTIROL bearing construction in addition to reduced internal wear and longer bearing life.

Lubrication Advantages

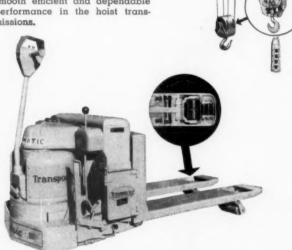


Important among these is the extra protection against destructive foreign particles provided in SE series bearings by a lubricant retaining groove, built into the inside diameter surface of the

roller retaining end shoulder. The ring of lubricant held in this groove acts against the inner ring O. D., increasing the sealing effect of the precision tolerances between these shoulders and the inner race. Notice, too, the groove above the roller ends. Acting as a lubricant reservoir, this groove provides MULTIROL SE series bearings with an extra margin of protection against neglected or delayed lubrication.

Typical Performance

Harnishfeger P&H Hevi-Lift electric hoists carry up to 15,000 pound loads on MULTIROL SE series bearings. Their extra capacity and precision with ruggedness help reduce necessary radial bearing space in the upper and twin bottom sheaves. Two additional SE bearings add smooth efficient and dependable performance in the hoist transmissions.



The Automatic Transportation Company's Transporter uses eight Multirol SE Series bearings in the four rear wheels to carry 6000 pound capacity loads easily and freely. Wheels are mounted dual on each fork and two bearings with a center spacer support each wheel. These small but rugged bearings accommodate a large shaft with a comparatively small O. D. and materially reduce starting and rolling friction for finger-tip maneuverability of this heavy duty material handler.

Other McGILL® Bearings







MULTIROL CF

MULTIROL CYR

A new 140-page Bearing Reference Guide complete with 30 pages of vital engineering data has just been released by the McGill Manufacturing Company. It has the full story on the advantages of Multirol SE Bearings as well as information on the Multirol CF and CYR and Guiderol Bearings. Send now for your copy of McGill Catalog No. 52.

McGILL MANUFACTURING COMPANY, INC.
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Ladish measures the spectrum to verify chemical composition

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One of many comprehensive Ladish laboratory test procedures for assuring reliable

Metallurgical integrity-is safeguarded at Ladish by unsurpassed laboratory controls. Typical is this advanced electronic directreading spectrograph. On this unit as many as 300 determinations have been made in one hour to verify compliance of each mill heat with exacting Ladish specifications and, equally important, to assure the absence of detrimental "tramp" elements. Here is but one indication of the thorough, scientific procedures that assure reliability in every Ladish Controlled Quality fitting.

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If you're in the market for fasteners, you can be sure of finding the right styles and sizes when you choose the Bethlehem line.

Bethlehem makes standard fasteners in all types. In addition to machine, carriage and lag bolts, we produce such items as turnbuckles, clevises, rivets, spikes and washers, all of them in a full size range.

You'll like Bethlehem Fasteners, not only for their variety, but also because they meet your requirements for strength and dependability. Give them a try, and see!

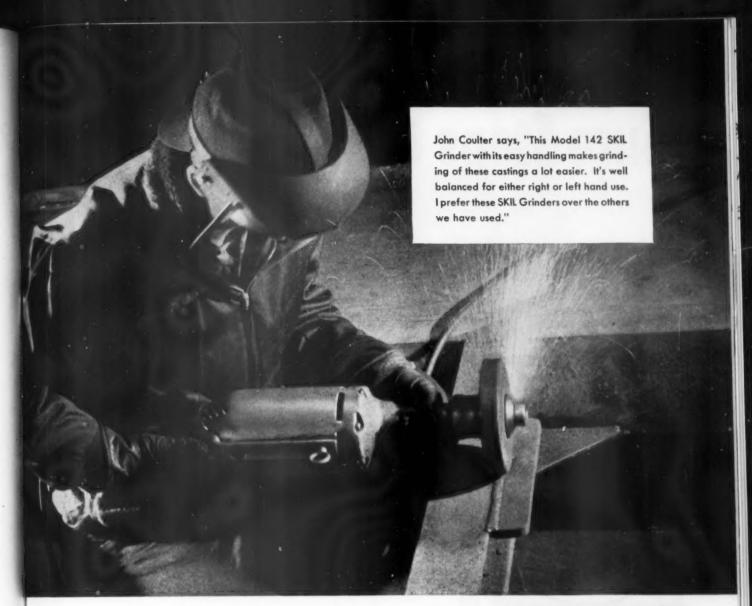
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Bethlehem supplies every type of Fastener



"3 year comparison tests prove styll best"

says Mr. Lou Grundon, president Little Giant Crane & Shovel, Inc.

Des Moines, Iowa

Mr. Grundon knows tools and how to get the most out of them. He has orders for his Little Giant Cranes and Shovels from as far away as Serbia, Venezuela and Arabia.

"We've used 6 SKIL Grinders for 3 years in direct competition with other brands," Mr. Grundon says, "and as a result, we plan to stick to SKIL tools in the future.

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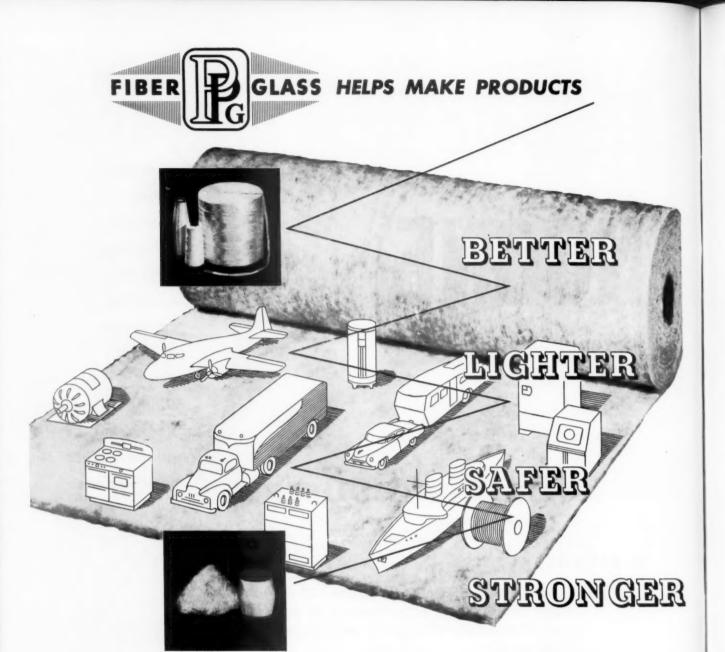
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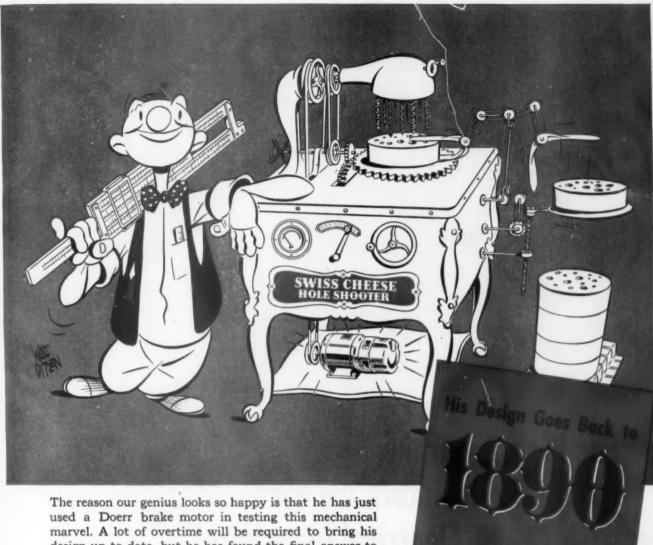
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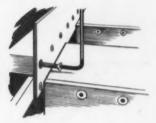
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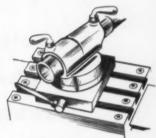
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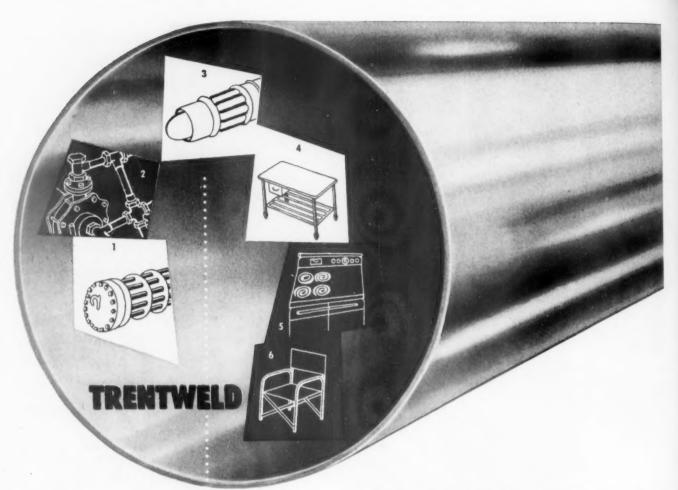
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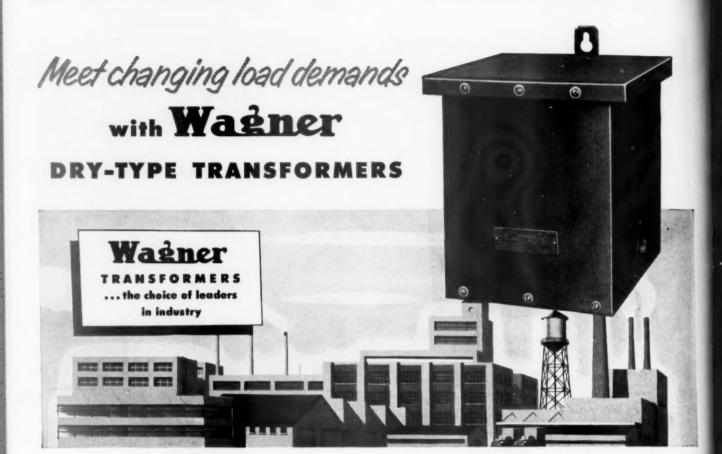
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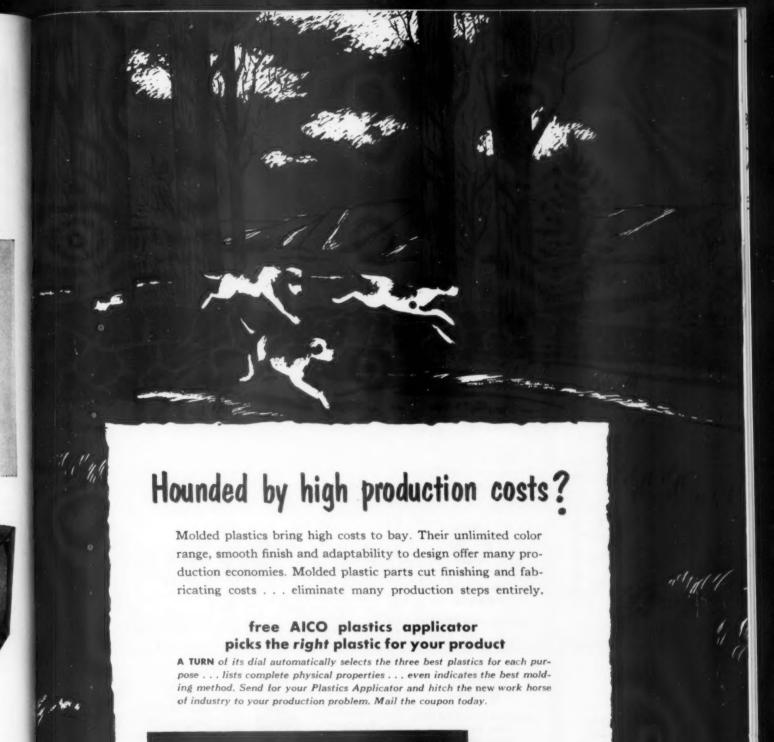
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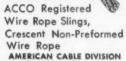


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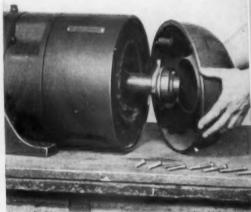
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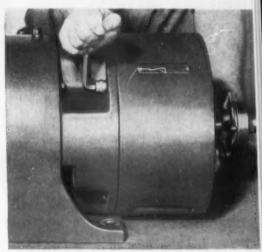
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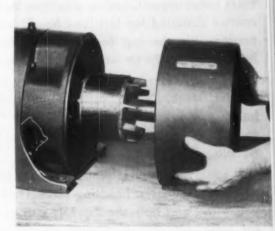
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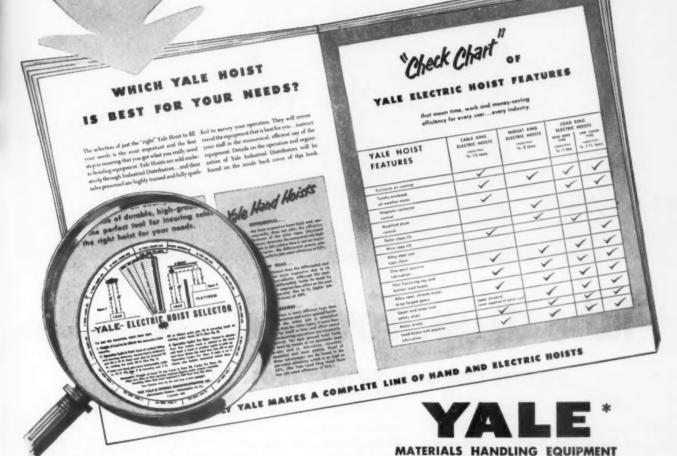
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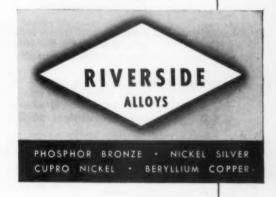


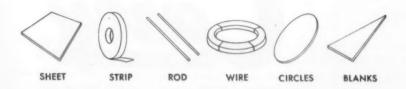
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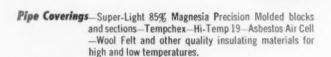
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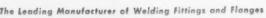
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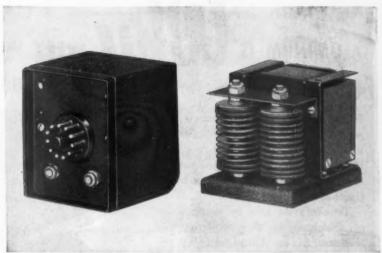


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40-VOLT-AMPERE INDUSTRIAL AMPLISTAT operates directly from 115-volt, 60-cycle power supply.



400-CYCLE PLUG-IN AMPLISTAT is a push-pull output DC linear amplifier with three separate input windings. Tube-type base simplifies mounting.

New line of G-E Amplistats now available for high-gain DC amplification circuits



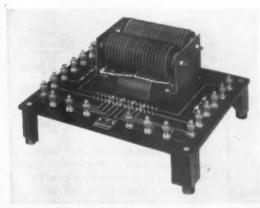
ONE-VOLT-AMPERE AMPLISTAT is compact (twoinch cube), mounts in standard octal socket for convenient connection and easy circuit testing.

The Amplistats (self-saturating magnetic amplifiers) illustrated here are typical of the units General Electric is now producing. Ten ratings have been designed to extend application to a wide variety of circuits. There are two models in the 1-volt-ampere range, one model in the 40-volt-ampere range, and two models for use with 400-cycle input current.

An Educational-Laboratory unit (40-volt-ampere) and a 400-cycle hermetically sealed unit are also available. New ratings of 25-volt-amperes, 125-volt-amperes, and 600-volt-amperes will go into production in the near future.

General Electric's expanded line of Amplistats offers you many advantages in the design of control and instrumentation systems which require high-gain DC amplification of small signal sources. Combining amplifying and rectifying elements in a packaged unit, G-E Amplistats give you instant starting, low power consumption, long life, electrical signal isolation, and rugged durability where moderate shock or vibration might occur. They are simple and convenient to mount, and are often lighter in weight than other types of amplifiers.

G-E engineers are ready to assist you in developing complete amplification systems around these units or in designing units for specific applications. Mail coupon below for more information on G.E.'s new Amplistat line. General Electric Co., Schenectady 5, N. Y.



EDUCATIONAL-LABORATORY AMPLISTAT (40volt-amperes) has multiple input for flexibility. Diagram molded into panel allows easy demonstration.

General Electric Company Section B 411-110 Schenectady 5, N. Y.			
Please send without charge b	ulletin GEA-5950 o	on G.E.'s new Amplistat line.	
☐ For immediate project.	☐ For reference only.		
NAME		TITLE	
COMPANY			
ADDRESS	CITY	STATE	

ALUMINUM IS WHEEL

ADDS FORTY POUNDS OF PAYLOAD

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Truckers do this by using a lot of aluminum in their tractors and trailers. Alcoa Aluminum Forged Disc Wheels combine the strength and durability of a forging with the lightness of aluminum. Weighing 30 to 50 pounds less than their steel counterparts, they can add 400, 700, perhaps 1,100 extra pounds of payload—depending on the number of wheels the rig has.

Alcoa Aluminum Forged Disc Wheels offer other important advantages besides weight savings. Tires run cooler because of aluminum's

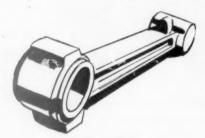
high-heat conductivity. Tires change easier because Alcoa Wheels are smooth and free from rust. Alcoa Wheels offer easier steering, longer tire life and smoother ride because they are precision forged and machined to run true.



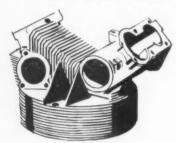
ALUMINUM COMPANY OF AMERICA



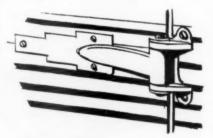
ALCOA IS HOW It was Alcoa who first recognized the extra bonus of lightness that forgings could give truck wheels. And it was Alcoa Engineers, who designed the first forged wheel. In Alcoa Research Laboratories, special testing machines were built to punish and study the wheels under every conceivable condition of service life. Almost 50,000 Alcoa Forged Disc Wheels are giving extra payload to truckers all over the country... many wheels have run over ½ million miles and are still going strong. Aluminum Company of America, 878-F Alcoa Building, Pittsburgh 19, Pa.



connecting robs for diesel engines, air compressors and outboard engines are forged of aluminum. They combine maximum strength with minimum weight and size.



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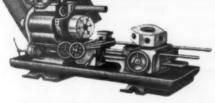
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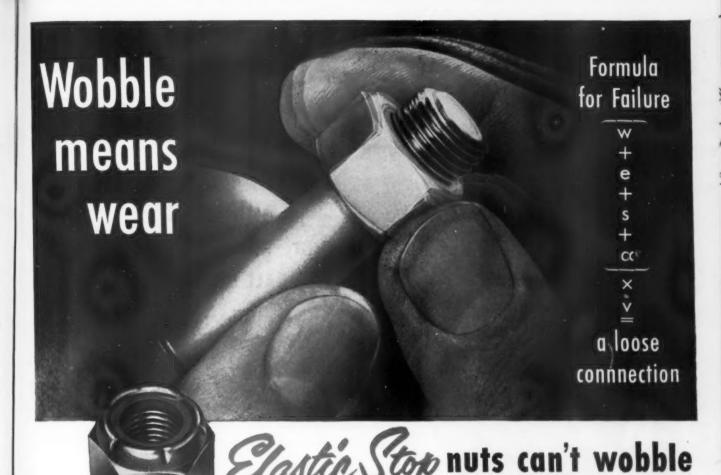
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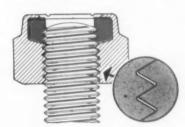
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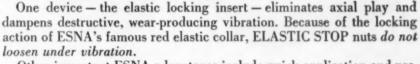
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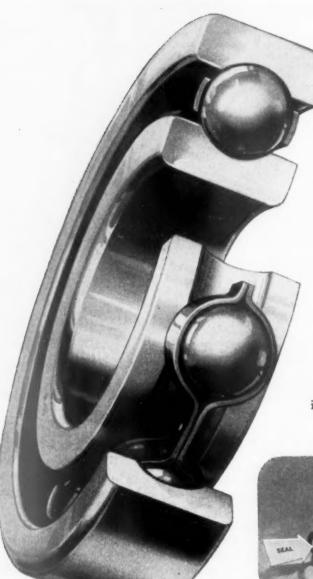


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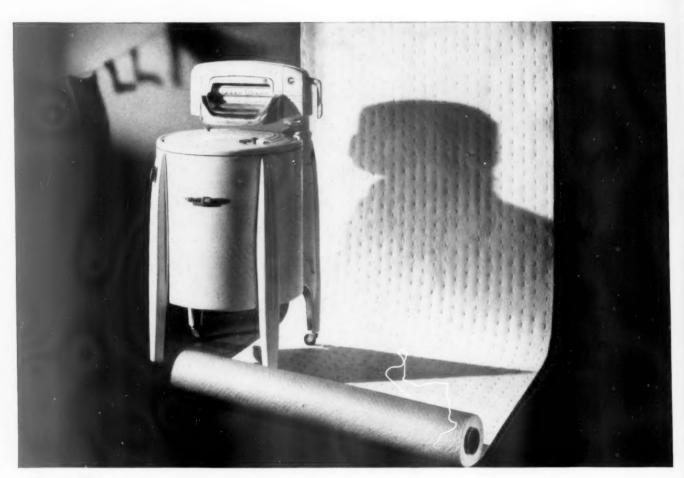
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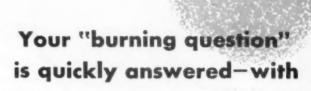
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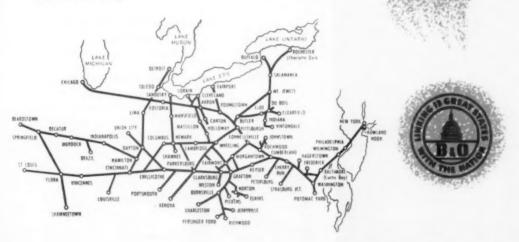


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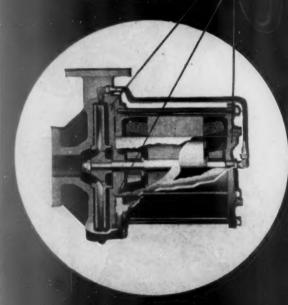


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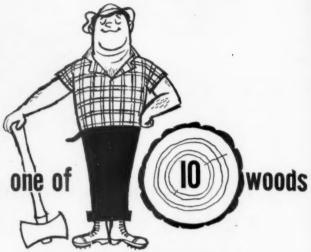
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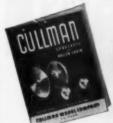
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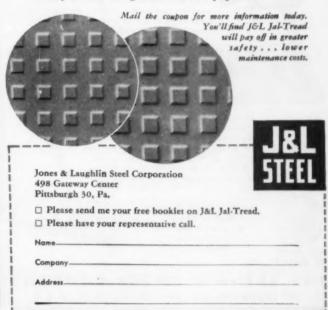


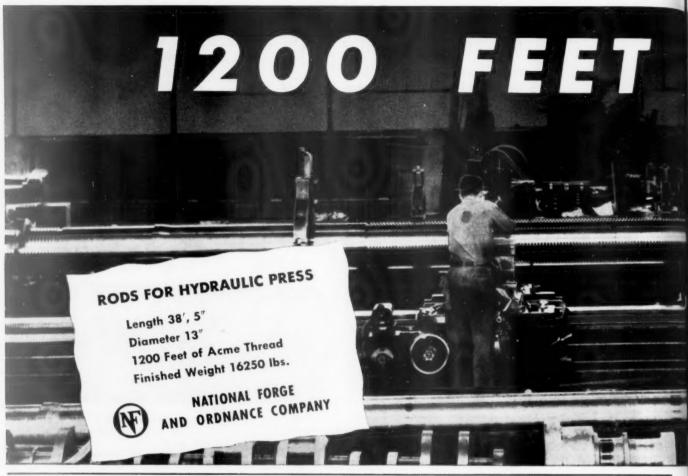


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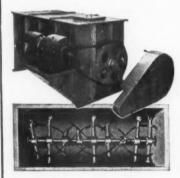




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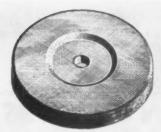
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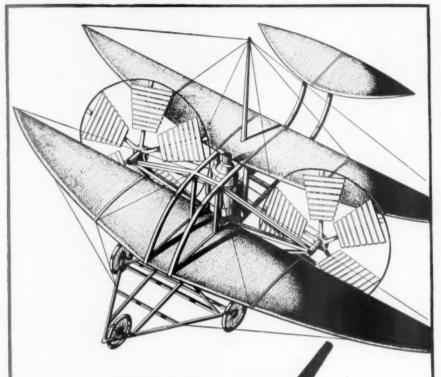


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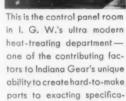


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MATERIALS-HANDLING NE

Panel Discussions by Bassick, World's Largest Manufacturer of Casters and Floor Protection Equipment

Two New Bassick Casters To Save You Money

New low-cost 5" and 6" sizes for loads up to 1400 lbs feature Double Ball-Bearing Swiveling

Big news this month from Bassick, world's largest maker of casters, is the development of two new high-efficiency casters for shop trucks and mobile equipment used in factories, stores, warehouses, hotels, hospitals, laundries, etc. They join the famous "68" series (and are matched by identical additions to the "08" series of rigid casters) popular everywhere for fast, easy swiveling and built-tolast construction.

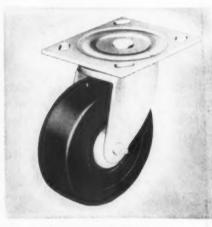


Six-inch Wheel

No. H6686-2-1 - with soft rubber tread for loads up to 250 lbs.

No. H6689-2-1 - with Atlasite solid composition tread for loads up to 350 lbs.

Both types have 1½-in. tread width roller bearing wheels with thread guards.



Five-inch Wheel

No. H5686-2-1 with soft rubber tread for loads up to 200 lbs.

No. H5689-2-1 with Atlasite solid composition tread for loads up to 300 lbs.

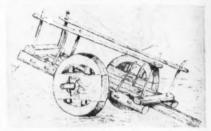
Both types have 1½-in, tread width roller bearing wheels with thread guards.

Three Big Reasons Why They Save You Money

LOWER INITIAL COST . . Actually priced lower than most less efficient 5" and 6" casters having only single ball race bearings. EASIER SWIVELING . . . The Bassick "Diamond-Arrow" double ball-bearing swivel construction provides the highest degree of swiveling efficiency.

LONGER LIFE . . . Raceways are fully case-hardened for extra durability and longer service life.

Man's First Invention?



Some experts say the wheel is man's original invention. Nature, they claim, gave him a hand or a hint for other basic ideas like fire, boats and airplanes. But the wheel emerged full-blown as the brilliant idea of some unsung Stone Age wool-gatherer.

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The primitive cart shown above is equipped with massive wheels hand-hewn from a tree trunk. The wheels show considerable ingenuity of design. A rude form of hub has been introduced, consisting of a separate circular piece inset into solid wood. Not a scrap of iron was used in the construction of the entire cart.

Materials-handling has come a long way since this cart, and wheels continue to be one of the most important products in modern civilization. They are the basis of practically all easy movement. Today, Bassick industrial wheels are made in a large range of materials, sizes and capacities for use as wheels or in Bassick casters. If you want to make sure your production keeps rolling, check with your Bassick industrial distributor. He'll be glad to recommend the best Bassick caster or wheel for the job. Or write directly to Bassick at the address below.



THE BASSICK COMPANY Bridgeport 2, Conn. In Canada: Belleville, Ont.





GET THE FACTS ABOUT THESE NEW MONEY-SAVING CASTERS

Write to us or ask your industrial distributor salesman for the full story on these two new Bassick casters. Let us show you how they can save you money three ways: lower initial cost . . . easier operation . . longer life. We're ready to show you samples of the new casters and what they can do to speed up movement of needed materials through your shop or plant.

in Park Ridge, N. J. Mittag & Volger, Inc. RELIES on HARTZELL fans and blowers

There's a Hartzell fan or blower to meet every industrial air-moving need. At the Park Ridge, N. J., plant of Mittag & Volger, Inc., manufacturers of carbon paper and inked ribbons, more than 20 different Hartzell units have proved that when air-moving problems are getting you down it pays to rely on Hartzell.

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Shown at right above are the two Hartzell directdrive duct fans which are used for rest room exhaust. The lower photo shows the three Hartzell 28" Lo-Noise Fans which provide quiet, efficient ventilation for the mill room. Roof ventilators and unit heaters are also counted among the Hartzell equipment giving dependable service at Mittag & Volger.

The right equipment, properly used, will beat even the toughest air-movement problem. The right equipment? Hartzell has been a leader in the industry for more than a quarter of a century because Hartzell engineering and quality workmanship are concentrated on one objective-more efficient, more economical airmoving equipment for industry. The right installation? Your nearby Hartzell field office puts the engineering "know-how" of the whole Hartzell organization right in your back vard.

Send us the details of your air-moving problem today. (And send for Catalog B-10, with details on the new line of Hartzell centrifugal blowers.)

The installations shown in this advertisement were handled by the Hartzell field office at 1440 Broadway, New York 18, N. Y.; telephone PEnnsylvania 6-0277.





Single propeller, twopropeller and multiblades styles. As easy to install as a section of duct.



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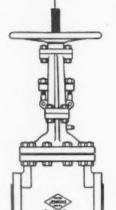
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